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"FLAT FOOT" AND OTHER STATIC FOOT TROUBLES.*

By Frederic J. Cotton, M.D., Boston.

The foot is the only part of the body that commonly gives out under ordinary conditions, without disease or injury, before the age when degenerative changes are to be expected.

No doubt bad shoes and hard pavements deserve the abuse they get in this regard; also one must remember that the foot is at the *bottom* of the pile, and is the only part that carries *all* of the body weight.

Now, a great deal of writing has been perpetrated on foot troubles of static origin, whereas the matter is really simple in statement, if not always simple in treatment.

One may classify these conditions with a good deal of accuracy,—and with but little overlapping of classes.

The list will include:

1. "Flat foot"
    a. Habitual (reducible) which takes in most of the cases
    b. Rigid. or spastic
    c. Bony
2. Short heel-cord with or without flat foot
3. Contracted foot
4. Anterior arch trouble
    a. "Morton's disease"
    b. "Fallen" anterior arch
5. Hallux valgus
    a. Hallux rigidus

and of all these it is the Class 1 *a* that fills the orthopedic offices and keeps the shoemaker busy devising and advertising the perfect shoe and the ideal arch support.

1 *a. Flat Foot. Habitual.* Before one can get a working notion of what this sort of "flat foot" means, he must know the mechanism, what one may call the mechanical physiology of the foot. We must understand how the foot works,—normally.

This understanding is very much clouded by all the nonsense talked about arches, whether fallen arches or not. For all purposes that concern us, it is well to forget the arch. There is no such thing as a fallen arch of the foot; there is no arch, anyway, in any real sense. It just looks like an arch,—and even at that it *does not fall* but *rolls over,* if it gives way.

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* Rewritten after a talk given before the Brookline Medical Society, Oct. 1, 1917.

The motions of the foot that concern us in relation to static troubles occur mainly in a joint that we rarely think of—the joint (or pair of joints) *beneath* the astragalus. In most feet this is the only joint below the ankle with any considerable range of motion, and it is in this almost forgotten joint,—not in the medio-tarsal joint,—that the lateral motions of the foot take place.

The foot is first of all an antero-posterior lever, with a fulcrum at the ankle, with a *short arm*—the os calcis—to which power is applied through the tendo Achillis, and a *long* down-thrusting front *arm.* For purposes of propulsion the ankle is like a horse's hock, and the ball of man's foot is the hoof that gives the last shove to the spring. Man *stands,* like the bear, all along from toes to heel, and *balances* on the hock, or ankle. As a balancing (not a shoving) member the foot is a base, the leg pivots on this base at the ankle, and the balance is preserved by a pull on the heel-cord behind and on the tendons of the tibialis anticus and the dorsal extensors in front. There is a lateral motion also. This occurs, not, as often taught, at the medio-tarsal joint, but between astragalus and calcis, about an oblique axis pointing down and back (See Fig. 1). This motion occurs as a rolling in and out, with a sweep of motion much greater at the front than in the rear,—a rolling of the foot *under* the *stationary astragalus.*[*]

There is no *in*ward or *out*ward movement of the foot and no circumduction possible, except as these movements are *part of the single movement of pronation and supination* permitted by this subastragalar joint. This is a rocking motion taking place about the great ligaments attached to the bottom of the astragalus near its centre, and hitched to the centre of the os calcis,—between the front and back joints.

With the foot flat on the floor[†] in *supination,* the head of the astragalus (on the front-inner-end of the astragalus) moves outward; what we will call the rear-end (really the *outward*-and-rear position) slides up and inward in the joint on the os calcis. With this motion there is a little play in the mediotarsal joint, and the foot proper—all that part below the astragalus—becomes concave on its inner side.

In *pronation* the reverse happens,—the rear of the astragalus slides down and out, the *head swings inward and down,* the medio-tarsal joint makes way for it a bit, and there is both a rolling of the foot down and in, *under the astragalus,* and some *ab*duction of the front part of the foot at the medio-tarsal joint

In standing, this last is the position of "passive weight bearing"—the "slumped" position: the habitual assumption of this position is what we call "flat foot," "weak foot," "pronated foot." (See *b,* Fig. 7.)

What can hardly be over-emphasized is that this condition represents no deformity, but merely a *position of relaxation.* Such a foot has no bony changes, and is perfectly capable of correction.

There *is* such a thing as a bony deformity in flat-foot, but it implies long continued strain *at the developmental age,* and is not usual.

What we see, what fills the orthopedic offices and excites the shoemakers (and others) to frenzies of false theorizing, is this *habitually pronated foot.*

The difference between the pronated position and the normal balanced position depends *not on ligament support but on muscle action.* Any foot will, and often does, go into pronation in certain movements, as in walking on uneven ground, but it is *not habitually* pronated. It is a question of muscle-balance, of the preservation or restoration of proper muscles properly (and unconsciously) used.

Therefore the problem of preventing this sort of flat-foot, so called and the problem of the *radical cure* of the great majority of people who came to us for relief, must be on *physiological* lines.

At first hot-soaking, massage, etc., help to do away with the soreness. Then, strapping (Fig. 2), decent shoes, the Thomas sole and heel (Fig. 3), and the use of pads on an in-sole (Fig. 4), or even of a supporting plate

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[*] Stationary when it is the foot that swings; see following footnote.

[†] Just above, the notion is described academically, of the distal portion on the proximal, of the foot on the astragalus. This is, of course, accurate as to "circumduction" motions of the free foot but in daily use it is the foot that is fixed on the ground in standing or walking,—the parts above that move on the foot as a base.

The "physiological mechanics" of the joint, and of the whole set of motions in pro- and supination, "ab- and adduction," and "circumduction" of the foot, seem never to have been worked out prior to an investigation reported in this journal (Lovett and Cotton, BOSTON MEDICAL AND SURGICAL JOURNAL, Vol. cxxxix, July 28, 1898, page 101). The conclusions of this investigation were promptly accepted by Dr. Thomas Dwight and incorporated in the teachings of the Harvard Medical School, and have, so far as I know, never been challenged.

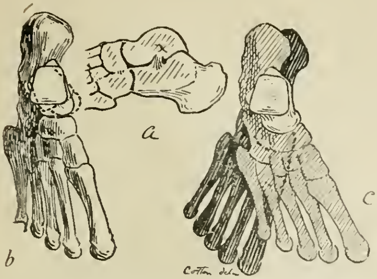

Fig. 1.—(a) Median section of foot, showing the joints and the ligaments between astragalus and os calcis; (*b*) Normal balance of foot. From this position the astragalus can swing over in further supination to the position sketched in dotted line. This position of the astragalus, however, implies an extreme supination of the whole foot, as shown in the lighter shading of (*c*). (*c*) Extreme supination (light): extreme pronation (dark)—with astragalus fixed.

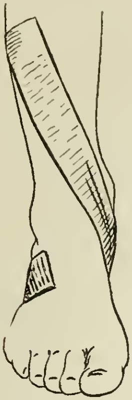

Fig. 2.—Strapping to correct undue pronation.

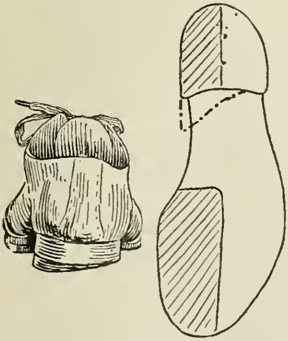

Fig. 3.—Thomas sole and heel to produce or help supination. (The forward extension is a later elaboration but is really worth while if the shoemaker can do it.)

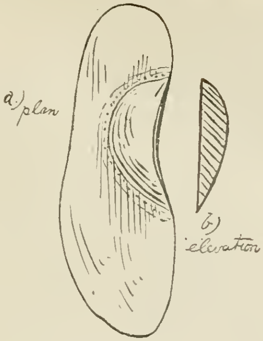

Fig. 4.—Felt pad on insole.

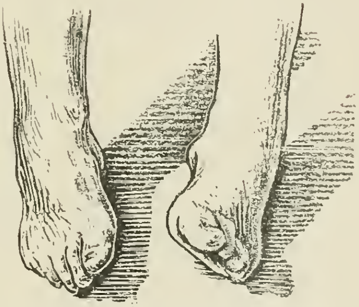

Fig. 5.—The outward rolling exercise. Weight on feet, body steadied by support of chair or table. Roll outward 12-30 times, twice daily.

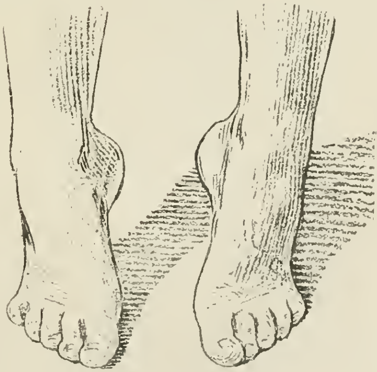

Fig. 6.—Second exercise—up and out—rise on toes and pull heels *in!*

under the sole will make the patient more comfortable.

But this is palliation, *not cure.*

Cure is by education and exercise only.

Plates are not only not called for as a permanent support but by their pressure make trouble and interfere with the proper use of the foot. The patient who cannot get rid of plates in three months has not, as a rule, had proper treatment,—properly carried out.

Now as to exercises, what muscles are at fault?

Particularly the tibialis posticus, flexor longus hallucis, flexor longus digitorum,—the whole group of muscles, the tendons of which run beneath the internal malleolus. These muscles may not be weak, but they lack tone and are not habitually in use, as they should be.

Besides these, the short flexors of the foot should help in maintaining proper position and action.

There is no point in working out special exercises for *each* muscle,—*it is much better to exercise them in their natural group motions,** and such exercise is more practical, as experience shows.

Of the exercises shown practically efficient, I prefer the following:

First comes the rolling exercise. (Fig. 5.)

Second, plantar reflexion with supination. (Fig. 6.)

Start the patient doing these exercises twenty to thirty times, morning and evening. Emphasize that in the second exercise he pay especial attention to keeping the ball of the foot *flat on the floor,* as he comes up, and twist the heel inward, and that he try to grasp the floor with his toes.

At the next visit add a *third* exercise, voluntary supination *with the whole foot on the floor.* (Fig. 7.) This is not so easy to "get the hang of," and requires a little persistence on the surgeon's part in many cases, besides a certain "sweet reasonableness" on the part of the patient.

Next, get the patient to try always, as he walks, to *feel* his weight on the *outer* side of the foot, always to use his toes as he walks, and always to toe straight forward. Show him, *on himself,* that he *necessarily pronates if he toes out,* that he *cannot* pronate if he *toes in* sharply. If he must stand a good deal, then emphasize the usefulness of toeing-in sharply with the weight-bearing foot—a very sparing and practical trick. (Fig. 8.)

After a few weeks he will himself be ready to do away with relieving supports of all kinds, and will be *not relieved, but cured.**

Some feet one does meet that resist such curative measures. The patient's weight or age, or other infirmity, or his inattention, defeat proper treatment, or even forbid its being instituted.

What of these cases?

In my experience these cases are very apt to be failures under the usual plate treatment, and drift from one office to another, and try out one after another theory of plate cutting,—and some of the plates devised certainly are weird enough so they should accomplish something,—but they seem not to.

Broadly speaking, if a foot is poor enough to call for more than *a little* support, it will not tolerate the *pressure* of this support *from beneath,* however well-fitted the plate.

In these cases it is justifiable to try sole plates, but only to try them. If they do not work, frankly give them up for the rocker plate or the outside-upright.

The rocker-plate is devised not to *thrust upward* on the sole but to *roll* the foot *outward,*—relying on the fact that the outer edge of any foot is lower,—and strikes the plate first in stepping,—and so starts it in a roll outward on the round rear-edge of the plate with a resultant push of the plate outward on the inner side of the foot.

Difficult to get made, not easy to fit, these rocker-plates are not always comfortable, because of friction, but they do the work mechanically, and do it well in many cases.

Surest of all is the outside-upright with ankle-joint and T-strap. (Fig. 9.)

No one likes the idea of so much apparatus, but if the steel is made light, and if the ankle joint is at the proper height, such ap-

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* Many exercises advocated are based on the value of the tibialis anticus as a corrector. This I believe to be wrong. This muscle in normal walking does supinate the foot as it leaves the ground, but does not act in rhythm with the others *in the step* at all. I believe its cultivation of no account in flat-foot treatment.

* If practicable, it is of great advantage to have *supervised* active exercise—to the end that the patient may not only be shown *how* to walk right, but may be hardened into doing the right thing.

In the army I had a chance to do this, and the very excellent results achieved with "flat-feet" at Walter Reed General Hospital in Washington, in the summer of 1918, were largely due to Lt. Harry Goldblatt's "flat-wheel squad," which paraded every morning for a mile or two under escort of this excellent officer with a "bucko" sergeant holding the formation. Capt. Rich, further west, and a score of others did like work with results. In civil life one cannot quite do this but the idea is worth keeping in mind. A lot of folks seem to need driving.

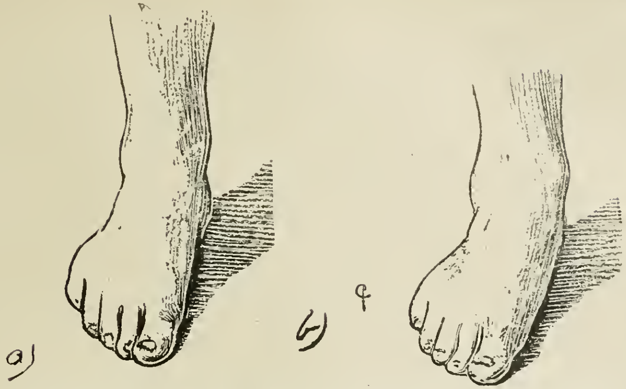

Fig. 7.—(*a*) The normal *balanced* foot held in moderate supination. If one can at will convert *b* to *a* much has been gained. The semi-involuntary conversion of *b* to *a* as a result of special training constitutes the only cure of "flat-foot" known to the writer. For those inclined to be of faint heart, let us say that this conversion of voluntary into subconscious control of muscle-action takes place a bit more promptly than one would expect.

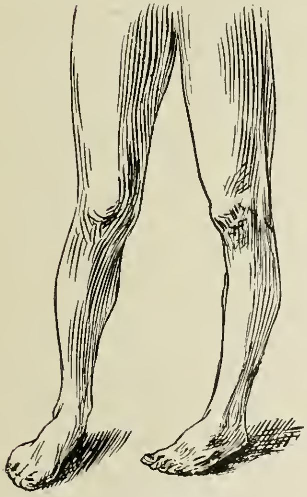

Fig. 8.—"Toeing-in," a position much frowned on by our teachers and elders, is really an admirable corrective of pronation—awkward as it looks. One *cannot toe-in* and also pronate. Try it!

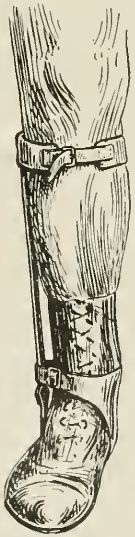

Fig. 9.—Outside support with ankle joint and T-strap to limit pronation.

paratus is hardly to be called cumbersome, and will put on their feet many otherwise helpless people. Later, after relief on this line, you may experiment on these folks with plates and exercises, and may perhaps succeed with some of them. Some cases never get away from the supporting upright, at least for sustained walking and standing.

Class 1 *b* is the rigid or spastic flat-foot, held in *fixed pronation* by general muscle-spasm, or by spasm mainly of the peroneal muscles. Such spasm is not correctible by exercises, by plates, or by forcible manipulation of any usual sort.

Tenotomy of muscles will do it, *but is not needed or justifiable,* as a rule.

Unless such spasm quiets promptly, after a few days of *absolute* rest in bed (and heat, massage, etc.,—which do *not* work more often than they do) then we must correct the spasm by stretching under ether, and must hold the correction by a plaster, applied with the foot in forced inversion.

After a week or so in plaster we may treat the case as one treats a tender non-spastic flat-foot.

Class 1 *c. Bony Flat-Foot.* These cases vary from the convex "flat-foot,—the "wheel-foot" ("Rad-fuss") of the German books,—to cases in which there is only moderate though definite bony change, resulting, usually at least, from changes occurring late in childhood.

In the draftees of our last two years there have been many such cases,—and a surprisingly large number of them have been farmers. and not a few mechanics, of good general physique.

Often enough a foot of this type may be perfectly serviceable for ordinary use, though unfit for army "hiking" under a load.

I have known one star sprinter and jumper with this type of foot, and a lot of gymnasts, and not a few high-grade strong-men and weight-lifters.

For the surgeon it is a matter of symptoms, —only.

If such a foot has done its work in the past we can bring it back by the usual methods,—by correction (in plaster if need be), by exercises, by temporary supports, baking, massage, etc., to its *previous* condition.

Cure is possible only by operation, and in the obstinate and extreme cases of this type with disabling symptoms the Ogston operation, of cuneiform resection, is the desirable means. This operation does not give back full mobility, but does bring the foot back under the leg where it can do its work

Class 2. *Short Heel-Cord.* Of late one has heard a lot about short heel-cords, which have served as an excuse for an ingenious and profitable operation of tendon lengthening.

Despite my failure to find any considerable number of cases of this type calling for any cutting operation, there is no question about the frequency of short-heel-cords as a factor in foot troubles.

In fact a very considerable proportion of all our women (men are rather rarely so troubled) have lost their normal range of dorsal flexion, and can hardly bring the ankle to a right angle.

High heels—habitual high heels—are most often the cause,—by way, probably, of disuse of this motion.

Often no harm results, but, especially if the afflicted lady gets into low heels to play golf or the like, she falls victim to a curious mechanism of foot action.

If, with a short heel cord, one comes down to low heels, then an odd thing happens. In the forward stride one has not motion enough, and instinctively toes out to supplement this motion with the slack obtainable in the mediotarsal joint,—and so induces "flat-foot" symptoms.

One sees this condition not uncommonly in "probationer" nurses, long habituated to high heels and put suddenly into "ground-gripper" or orthopedic shoes. They "crippledown" promptly, in many cases, but can be relieved by putting them back into the thoroughly wrong shoes they have previously worn. After they get better, one may tackle the real problem of restoring the foot to normal conditions. Or, if they are happy in high heels, perhaps there is no reason to disturb them.

Newton Shaffer first showed us how to stretch calf-muscles and heel-cords. The late G. G. Davis, of Philadelphia, showed how to do it easily, and the Davis "wrench" should be a part of every surgeon's equipment.

The underlying fact is that the heel-cord—or the muscles of the calf—can easily and painlessly be stretched, without ether, in one or several seances, as far as one needs to stretch them. When this is done, these cases of short heel-cord nearly all become merely "weak" or "pronated" feet, to be treated *secundum artem.*

Until this stretching is done, no treatment is of much avail for these cases, for they cannot be put into even reasonably sensible shoes. As soon as they come down off the high heel, the tension of the heel-cord forces them to complete each stride by toeing out and rolling the foot into pronation,—since they cannot dorsally flex it.

Class 3. Contracted Foot. This deformity is not, in my opinion, static at all, save in the sense that use aggravates the symptoms, but it is often so like the spastic (Class 1 *b*) in general outward semblance that it must have a word.

Contracted foot, as the term is used here, is a condition of atrophic muscles, and of contractures of muscles, and of fibrous tissue, that leads to loss of power and to structural deformity. The cases all date from childhood and are practically always bi-lateral. They are certainly related to the spastic paraplegias, and, I think, are about always congenital.

None the less they often come to us with a history of trauma or overstrain, and are at least greatly aggravated in symptoms by trauma and often first noticed after such aggravation. I have seen a small group of such cases among soldiers in all of which injury or heavy "hiking" had produced just this picture in feet really typically contractured, which had previously done average service in life without symptoms. Oddly enough, it is usually one foot that gives trouble, though both may be about the same objectively.

A foot of this sort presents an abnormally high arch, a short heel-cord, toes cramped into flexion, but lifted back into dorsal flexion at the metatarso-phalangeal joints, tight-drawn plantar fascia, and, most characteristic of all, prominent bearing surfaces, calloused and usually tender, over the metatarso-phalangeal joints of the first and fifth. The heel is apt to be turned in.

There is markedly small bulk in all the small muscles of the foot, most obvious in the hollow sole.

There is a claw-like look to the whole foot, but this is often not very obvious at first glance.

All tendons are tight but (unless as a result of recent acute irritation) there is no sharp muscle spasm.

These cases may be palliated by rest and strapping support, by pads behind the calluses, etc.

Practical cure may be obtained by tenotomies, and to these may well be added the McKenzie-Forbes operation of transplantation of the extensor proprius hallucis to the far end of the first metatarsal. I have had good results both ways. One case, entirely crippled before operation in 1914, has served through the war in the Navy. When I last saw him, in April, his only complaint was that he couldn't get out.

If persistent tenderness below the first metatarsal phalangeal joint persists, and is not relieved by a proper padding, I have had admirable results in two cases from excision of the prominent sesamoids through a lateral incision, avoiding the weight-bearing surface.

4. *Anterior Arch Troubles.* "Fallen arch" in common parlance means pronated foot, "falling" of the longitudinal "arch." But, we have not only the long arch but the "*anterior arch*" which is liable to "fall." It might fall, but there would have to be an arch to fall—*and there is none*—not even a trace, any more than there is an arch of the palm of the hand.

However, the ball of the foot is so made that if it is squeezed out of shape, or if it bears weight unevenly, there is trouble. One form of trouble is Morton's disease. (4 *a.*)

4 *a.* If you press down on the middle knuckles of the hand and then squeeze, you pinch nerves. Most schoolboys know this.

If you wear a shoe with a concave sole, tight enough to squeeze the foot laterally, you may get Morton's disease, which is merely a squeezing of the nerves between the third and fourth metatarsals brought about in this way. But Morton's disease is unusual, while "metatarsalgia" (anterior arch flattening) (4 *b*) is common.

4 *b.* This common type, easily recognizable by the central callus on the front part of the sole (See Fig. 10) and by the prominent heads of the central metatarsals, easily felt, is a distortion of the foot that leaves, not the whole row, but the second and third* metatarsal heads to carry the weight. It is a result of bad shoeing, of the wearing of concave soles. Tight shoes as such, save for those concave soles, have nothing to do with metatarsalgia except that in the Morton's type they hold the already displaced metatarsal on the nerve till the shoe is kicked off. In the more ordinary type, in fact, a looser shoe often aggravates the trouble. In such cases there is not the characteristic nerve pain of the Morton's disease type, almost unbearably acute, referred to the area of distribution of the nerve in the toes, but an exquisitely tender central callus and a dull ache of the whole front foot, that may be enough to amount to real total disability so far as real walking goes. The chiropodist pares down the callus and helps, *temporarily*.

In this type of cases there are no muscles that can be called on to act.

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* Or less usually the third and fourth.

There is no possibility of physiological cure in anterior arch troubles. We must relieve by support.

Cases get *better, not well,* and always require care, in regard to shoes, at least.

There are several ways to go about treatment.

The Thomas or Jones scheme,—a bar across the bottom of the sole just behind the metatarsal heads—flattens the sole and gives a rigid surface, but is clumsy. Morton's cuff (Fig. 10), with a pocket into which is thrust a heavy rounded felt pad, is excellent. Better yet is a similar felt pad held in place with a band of adhesive plaster about an inch wide, encircling the foot. This requires renewal, of course, and cannot be renewed indefinitely without skin irritation. By either method the central metatarsals are shoved up—back into their proper relation—by pressure *behind* the sensitive, calloused skin beneath the heads, and then the bones are held steady by the encircling strap.

Or, merely a pad *usually* suffices—set on an insole—behind the central callus (Fig. 11). Such pads should be higher than one would expect to have tolerated (up to ⅞ of an inch) and relatively small, not over 1¼ inches broad, 1½ inches from front to back.

Certain patients, given a *flat, solid shoe, rather snug-fitting,* need no other treatment. Certain others do better with a decent fit, with a flat sole and simply a strap (no pad) around, just behind the ball of the foot, preventing the spreading apart, the flattening and distortion, the tendency to which persists even if the shoes are seen to.

Anterior-arch plates alone are unnecessary, though a plate supporting the long "arch," with a hump to lift the anterior "arch," may reasonably be used at times if there is associated pronated foot.

5. *Hallus Valgus.* Hallux valgus is, in common parlance, a "bunion." The bunion is a chronic bursitis of what one may call layers* of bursae over the joint.

The bunion results from shoe pressure due to a prominent joint, said prominent joint being due in turn to previous criminality in shoeing, as a rule.

A "tooth-pick" shoe, or a shoe too short, *starts* the deviation of the great toe outward.

Modern shoes are not so bad: in bunion cases today we are dealing mainly with the results of the felonious shoe trade of the '90's and the first years of this century.

The great toe, once started outward, is constantly pulled outward by the obliquity of the flexor (and extensor) muscles (see Fig. 12.3) and pulls over worse and worse.

As it pulls over, arthritic changes (even in patients otherwise innocent of "rheumatism") occur, and the part of the metatarsal head vacated, so to speak, by the retreating phalanx, grows apace. (See Fig. 12.2.)

Meanwhile the bunion gets worse, despite the chiropodist.

Hallux valgus, once established, is, save for surgical operation, incurable,—the much-vaunted splints are not worth the trouble as to cure. Much alleviation of discomfort from the associated bunions may be secured by using pads exactly *unlike* the usual circular bunion plaster which only pulls outward so as to increase tension on the centre of the circle. *Proper* pads are horse-shoe shaped, as shown in Figure 13, so placed as to transfer unavoidable shoe-pressure to points capable of sustaining it without pain. Minimizing this pressure by proper straight shoes or by soft shoes of the general model of the old Waukenphast type, or even by slitting or cutting out of the shoes, is of obvious value.

As to surgery of hallux valgus. Many operations have been devised: of these some have been abandoned, some not yet abandoned; some are really worth while. The accompanying diagram may help explain the situation. (Fig. 12.)

One may do, first, the ideal operation,—which is undoubtedly that of the late R. F. Weir of New York, but it is a good deal of an operation and is not much done.

One may do, second, the usual operation,—remodelling of the joint (Fig. 12.5)—combined with a bursal excision.

Years ago I found it not worth while, in the end, to do this without also doing, first, a division by the knife, or, better and safer, by tension over an osteotome, of the contractured external capsule of the joint; and second, a looping or transplantation of the tendon of the extensor proprius hallucis to a point on the first phalanx of the great toe.

One may do, third, the cuneiform osteotomy of the metatarsal head (Fig. 12.4), which does

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* A compound bursa is common instead of the simple one usually assumed to be present. I have seen *three superimposed.* Almost always these bursae (or one of them) communicate with the joint. This is why the "bunion" as such is not operable.

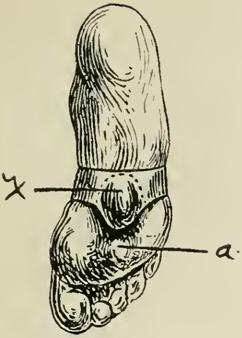

Fig. 10.—"Morton cuff" with pad in the pocket at X. The callus uniformly present in "anterior arch" cases is to be found at *a*.

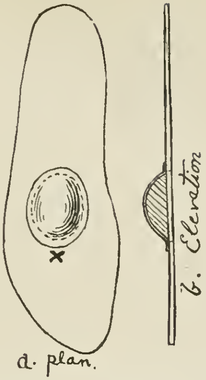

Fig. 11.—Pad on insole, for anterior arch trouble. X shows position of central callus, *from which* pressure is diverted by the pad.

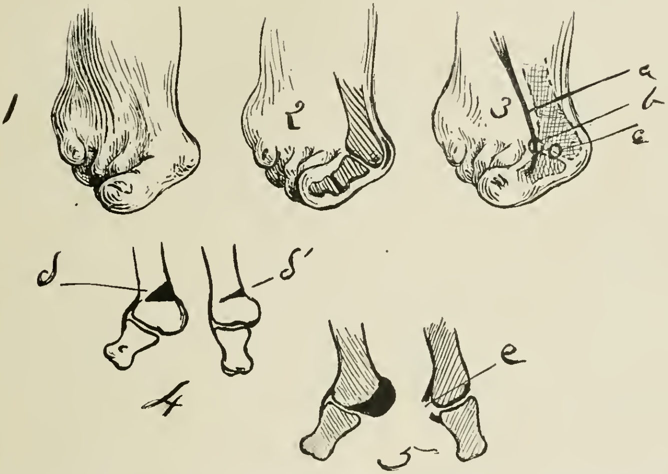

Fig. 12.—(1) Hallux valgus. (2) Hallux valgus: bones! Note hypertrophy of metatarsal head—obliquely. Note, also, the "bunion" bursa. (3) *a* Ext. proprius. Note *out*ward pull of the displaced tendon; *b, c,* are the sesamoids, displaced outward, more or less, with the flexor tendon. (4) Cuneiform osteotomy: *d* the wedge removed; *d'* correction after removal of the wedge. (5) Plastic operation. Portion in black is resected at *e*, the external ligament is divided permitting *real* correction of the deformity.

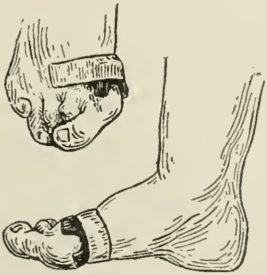

Fig. 13.—Proper bunion pads of felt.

everything except cure the bunion, which, after all, ceases to be important with the deformity corrected; one may *add* an excision of the bunion to the osteotomy operation.

One may NOT do any operation on the bursa (bunion) except in connection with a correction of the deformity.

Unfortunately none of these operations presents an easy job, easy as they look.

In the summer of 1918, the very wise gentleman in charge of the army medical service forbade further operations on hallux valgus in camp hospitals. This, I have reason to believe, was not the result of prejudices, but of proved disasters.

These hallux valgus operations are useful, but are rather difficult, and not to be done except under scrupulous precautions and with greatest care in mechanical as well as septic technic.

The common disaster is sepsis, for thick foot-skin is hard to disinfect; the common misdemeanor is the taking away of bone needed for support, or the doing of an operation so half-hearted that the deformity recurs,—and promptly.

Class 5 *a. Hallux Rigidus.* Hallux rigidus,—loss of the up-and-down motion at the bunion joint, "squaring" of the joints, with or without hallux valgus,—can be corrected only by operation. The symptoms can, however, be relieved, in many cases, by prescribing heavy stiff soles of the police-boot sort, and for many elderly patients, this is all that is called for.

These are the main static troubles and a sketch of the worth while ways of helping them.

This sketch covers only the "static" conditions. There are, of course, other foot troubles aplenty, not falling within the range of this sketch, ranging from Charcot-joints to soft corns, but the classes above covered constitute the great mass of the cases—nearly all that one sees in general or surgical practice.

One may hardly conclude an article on feet without talking about shoes.

The army shoe of today, despite its too long shank and too short toe, for a lot of feet, is still the best that has been done,—better, I think, than the shoes I cannot name without bumping a copyright, better than the shoes which in all our larger towns perpetuate the fame of each local practitioner who has worked over a special last.

The extreme "orthopedic" shoe calls for a position of supination that would suit the palm-climbing Filipino of Dean Worcester's Geographic Magazine pictures, but goes too far for our office cases, and tends to produce painful corns of the fifth metatarsal-phalangeal joint.

Given a shoe with a straight inside line, room for the toes, a firm clasp of heel and instep,—one cannot get anything more for working service for the civilized (not perhaps the ideal) foot.

What about heels?

Heels are a matter of habit. And habits may not always be changed without damage,-at least not without consideration and caution.

In the case of women, and even of grown girls, defective dorsal flexion is hardly the exception, and inability to flex dorsally beyond a right angle is not at all unusual.

It is not important whether this implies actual shortening of the heel cord or the calf muscles or not; the fact that is important is that a patient with such feet put into heelless or low-heeled shoes almost inevitably becomes lame with great promptness.

Whether such lameness calls for stretching, as described earlier in this paper, or whether a compromise (as to heels) between efficiency and fashion is the wise practice, must be debated in each case.

High heels are a poor sort of thing to walk on because they shorten the stride. They predispose to ankle sprains because they tip over sideways so easily. They jam the toes down into the shoe and thus help make corns. But that they cause flat-feet I gravely doubt.

One must always "sum up," and I think my summation is:

1. Most foot troubles are physiological,—"static" in origin.
2. In a large share, bad shoes are responsible.
3. In many, bad habits in use of the feet are responsible.
4. In cases of Class 1 *a* decent shoes and properly supervised exercises, properly carried out, will bring about a *cure* in a very large percentage—probably a majority—of the cases, certainly in a majority of the younger cases,—below 25 years of age.
5. These are the cases to which plates are too often applied.

6. Plates are still too much used.
7. Plates help, but never cure.
8. "Flat-foot" cases, as we meet them, call for either physiological cure,—palliation by straps, plates, etc., *then* systematic exercise, or else they do ill under the routine and call for more or less permanent support, or (rather rarely) for radical correction by manipulation or by open operation.
9. Anterior-arch troubles are readily relievable, as a rule,—very often not curable.
10. Hallux valgus (and hallux rigidus) may be palliated effectively, but can be cured only by surgery.

FREQUENCY OF URINATION.

By Frederick D. Davis, M.D., Springfield, Mass.

The frequent passing of urine is often an annoying symptom requiring attention, and not as often a nervous phenomenon as appears to the busy general practitioner.

Nocturnal frequency, of course, is the most serious, for while the mental faculties are at rest, the real causative factor is getting in its damaging work. This malady is perhaps more frequent in women than in men, due to pressure of the fundus uteri upon the bladder mucosa.

Causes. In the female, constipation is often the underlying factor. The common occurrence of women at the time of defecation to pass sheets of toilet paper forward in their endeavor to clean the sphincter, also at the same time catching a few drops of urine from the urethra, is another factor. This is a very bad procedure; because I believe it is liable to start up a colon infection in the bladder, causing a low grade cystitis.

There are several theories on extension of this type of infection up into the ureters, either by the lymphatic system, or by direct extension into the pelvis of the kidney.

Very recently, at a cystoscopic examination, this was shown by a large right pouting ureter,—nature's endeavor to ward off the extending infection. Urine taken from each kidney showed a marked colon growth on culture from the right kidney urine, while the left was practically negative; in this case an old chronic appendix and the possibility of migration of colon bacilli from this source to the right kidney. Many such cases among the young school girls, who lead a sendentary life, often go undiagnosed. They consult their family physician and ofttimes fail to mention this ailment until it progresses into an extremely annoying condition. He, in turn, prescribes a tonic, without a complete cure.

Tuberculosis of the urinary tract is probably more frequent than is generally believed. Frequency in this condition will begin many months before hematuria, due in all probability to the irritation of the beginning ulceration. Again, the earlier the diagnosis, just so much more chance has the patient of recovery after removal of the focus.

In the male, frequency in a large percentage of cases is due to enlargement of either lobe of the prostate or the median bar. Here the one determining factor is the amount of residual urine left in the bladder after forced urination. It is not necessary to go into the various types of prostatic enlargement—from the large baggy prostate, small nodular, to the carcinomatous type; all of which cause a marked frequency and almost always of the nocturnal variety. The patient is unaware that he does not completely empty his bladder, thus carrying all the time residual urine which, after a certain length of time, decomposes, causing an acute or chronic cystitis.

Strictures of the urethra are ofttimes the cause of frequency with the added inconvenience of dribbling, and the end of penis always remaining wet. The most frequent situation of a stricture is either posterior to the meatus, or in the membranous portion of the posterior urethra. They may be hard and indurated, soft, or thin and fibrous. They are apparently the bugbear of the general practitioner, due to the fact that after a severe stretching with sounds they recur. Behind these the germs of gonococci remain for a long period, ofttimes dormant, and at the least provocation start up an irritation simulating a reinfection of gonorrhea.

I cite one case due to a foreign body in the bladder, causing frequency: Young female, twenty years, stenographer, came for relief of frequency with tenesmus; when on the toilet says there appeared to be a plugging of the passage. The history sounded like a vesical calculus and I suggested cystoscopy. There was no hematuria, extreme constipation, otherwise negative. Cystoscopic examination revealed a foreign body in the bladder situated at the left side of the trigone. The operating cystoscope was substituted, and forceps passed into the bladder grasped the substance and it was withdrawn longitudinally. Upon examination it was found to be the rubber eraser of a lead pencil. This would have been voided voluntarily had the axis come parallel with the axis of the urethra. After questioning patient, she admitted trying to bring on menstruation.

It is quite singular how few symptoms calculi in the bladder will cause. At present, a case under observation in which I have crushed phosphatic calculi still has one calculus the size of a walnut which does not cause much frequency. It seems almost incredible that the bladder will act as a cushion for it to rest on.

Treatment. Colon infection of the kidneys responds remarkably well to the washing out of the pelvis of the kidney with one-half of one per cent. silver nitrate. It seldom requires more than three or four washings before the symptoms are mitigated. In a series of ten cases a percentage of 90 per cent. showed marked improvement and at this date no recurrences.

Treatment of tuberculosis depends wholly upon the stage of the disease; the earlier the focus is found and treated the more chance the patient has of acquiring relief, or cure. It goes without saying that when infection invades both kidneys, the bladder will shortly suffer, and the only recourse is mild, soothing treatment. In searching for germs of T.B., it is always advisable to use the guinea-pig test, as ofttimes in a smear the smegma bacillus will confuse.

Treatment of prostatic obstruction again depends a great deal upon the duration of the ailment. Early prostatic disease can be remedied without the aid of the knife. Prostatitis following gonorrhea responds readily to massage, while the other prostatic enlargements are nearly all benefited by the application of heat, either with the Chetwood tube, or by more recent electrical apparatus. In median bar enlargement I have given much relief by use of fulguration with high frequency spark. Young's incisor works quite good in some cases although the disadvantage lies in the fact that the treatment is carried out without the use of direct vision and thereby danger of hemorrhage and getting a larger portion than expected. Fulguration seems to me the choice of procedure, although it takes several seances before the desired effect is procured.

Treatment of Strictures. All sorts of methods have been devised for treatment of strictures, and today urologists are discarding both internal and external urethrotomies, and resorting to them only in extreme cases. The sound, of course, is the common weapon in the hands of the inexperienced. I say inexperienced for I believe the passage of a sound is an extremely delicate procedure, for many times those tried are of too small a calibre, and liable to cause one to make a false passage. In most cases I use a LeFort filiform attached to a sound, thus avoiding the possibility of making a false passage. Recently I have met with considerable success by using the urethroscope, looking directly at the stricture, then passing a small metal cannula attached to the negative pole of the direct current. By continuous application of ten minutes, using three to five milliamperes, the stricture is seen to disintegrate. It is somewhat more difficult to manipulate posterior strictures in this manner, nevertheless, it can be done with good success.

It still lingers in the minds of many medical men of the extreme pain connected with cystoscopy or urethroscopy, which is erroneous at the present time; for, with a four per cent. solution of novocain instillation into the posterior urethra, it can be made practically a painless procedure. The irritation may be greatly alleviated by a hot sitz-bath directly following the seance.

Medical Progress.

REPORT OF RECENT PROGRESS IN OPHTHALMOLOGY.

By Edmund W. Clap, M.D., Boston.

CORNEAL SCARS.

Holmes Spicer treats of the formation of clear spaces in corneal nebulae. The presence of clear lines in corneal scars has been long observed but not carefully described. Most of the changes depend on the presence of blood vessels which occur under the following types, (1) arborescent and superficial, (2) terminal loops in marginal inflammations and trachoma, (3) brush form of deep interstitial, (4) umbel form occurring in local inflammation of deep layers of cornea. Vessels keep to their own level, not anastomosing with those of a different layer. Geometrical clear lines occur in the midst of nebulae, the lines are straight or run into large smooth curves, sometimes parallel, sometimes diverging or converging or radiating from a center. Often they are sharp and straight as if ruled. These lines are often seen only against a dilated pupil. The explanation that they are lines of clearance or disappearance of nebulae due to development of lymph tracts is not acceptable. The probable explanation is as follows: "At a certain depth within the layers of the cornea a tuft of brush vessels makes its way; at the end of the attack the vessels shrink and lose their blood but remain as potential channels. These channels become greatly flattened from compression in the layers of the cornea, during and after subsidence of inflammation, and owing to this they have a much greater width than when they contained blood." "The contractile process which follows all attacks of inflammation produces a stretching along the course of the newly formed vessels confined to the coats of the vessel and its immediate neighborhood. The result of the stretching is to straighten the course of the vessel, to remove inequalities and deviations and to make it the shortest distance between two points." Vessels running through a healthy cornea after a time cause an opacity by interfering with the lymph circulation. This secondary opacification makes the old vascular channels visible and this is more likely to occur at the center of the cornea than at the periphery. The condition most likely to result in these lines, is acute vascular interstitial keratitis running a rapid course and leaving little permanent change in the endothelium Much deep change will mask the lines. The second type the author calls the mushroom cap. It is like a section through the top of a young mushroom showing stalk and crescent shaped cap and gills on the concave edge. The stalk is of a delicate blue gray, often with vestiges of vessels in it. Between head and stalk is an interval of clear cornea. The head has no vessels or remains of them and is a dirty white or buff. It is thin and apparently confined to one layer of the cornea and deeper than the stalk. Often a complication of two or more such systems may be made out. These mushroom heads appear some time after an ulcer has come to an end. A form is seen after attacks of scleritis. Successive attacks may leave a secondary opaque crescent in the cornea which may interlace or form a wavy band like an irregular arcus senilis. Dermoid tumors or naevi at the edge of the cornea may leave similar opacities. Destruction of tissue with ingrowth of blood vessels is a necessary preliminary to all these formations, the contraction which follows interferes with nutrition or interrupts the flow of the lymph through the cornea leading to stagnation, concentration and deposit of salts.

ARTERIO-SCLEROSIS IN CONJUNCTIVAL VESSELS.

Dennis has studied the conjunctival circulation with the Zeiss corneal microscope and special focal illumination. We quote his conclusions; that the normal picture is as follows: the wall is transparent and the lumen regular and the blood corpuscles clearly seen. Their flow goes forward promptly and without clogging or stagnation. The rate of flow is not the same in all vessels and all of the fine capillaries are not full at the same time. One may flash out into view and then disappear, *i.e.*. the corpuscles fill the vessel, move on, and an interval passes before the vessel is again filled with corpuscles so as to be seen. The vessels themselves are not very tortuous. In beginning capillary fibrosis the corpuscles clog the lumen, forming a mass as in a log jam, holding back the blood stream; suddenly the flow goes on again. Or a bead formation happens in the lumen, remaining stationary for several seconds; occasionally the pause is 14 seconds. In advanced cases the fine vessels remain nearly empty or some may be occluded. The lumen may be deformed with alternate strictures and dilatations like links of sausages, these being minute aneurysms. One eye may show such a condition while the other eye has a nearly normal circulation. The color of the vessels in advanced cases is lighter red than normal or if the walls are thicker the color may be rusty brown and the sclera appear very white. The author thinks that in younger subjects, through treatment, even aneurysmal changes may come back to normal. Luedde noticed even reverse flow for an instant in the diseased vessels and the author has seen this, too. Serial sections show increase in connective tissue. Changes in conjunctival vessels are found when the retinal vessels show no apparent changes. The author thinks the scleral conjunctiva the best place to study and that the internist should examine this region in cases of suspected vascular degeneration.

TREATMENT OF CATARACT.

A. S. and L. D. Green of San Francisco have tried out the non-operative treatment of senile cataract of Col. H. Smith of Amritzar. In 80% of their cases the opacification has been checked or the vision improved. These authors think that when vision has fallen to 50% of normal or below operation should be done. Before the vision has fallen to this point the non-operative treatment may be tried. The earlier the treatment is begun the better. Operation later is not interfered with. The one objection is the very considerable pain. Simple senile cataract with diffuse or radial opacities is most favorable for this method. Only the finest opacities seem to disappear. The patient should be in bed and the eye thoroughly anaesthetized with 4% cocaine. Then 20 mm. of 1-4000 cyanide of mercury solution and 2 mm. of 4% cocaine are drawn into a sterilized glass syringe. The needle is inserted under the conjunctiva just below the insertion of the external rectus muscle one cm. from the limbus in an area free from blood vessels and the solution slowly injected. Hot compresses are applied at once and maintained as long as the patient has pain. Morphine may be necessary. A week later the patient may use 1% solution of iodide of potash in an eye cup for five minutes at a time every morning and every other night. On the alternate nights 2% dionin is used and the strength increased 2% a month up to 8%. The injection is given but once. The conjunctiva may be so swollen as to protrude between the lids for a few days. The redness persists for three or four weeks. In 72 cases 18 remained stationary, 12 progressed, and 42 improved.

INTRANASAL DRAINAGE OF LACRYMAL SAC.

Fraser and Paterson of Edinburgh report fifty cases of intranasal drainage of the lacrymal sac. Of the patients 43 were female and in four the condition was bilateral. Average duration of trouble was three years. Most of the patients had dilatation, and probing and washing of the sac has been done without permanent relief. The nose was normal in 27 cases and in the others the nasal condition probably had nothing to do with bringing on the tear sac trouble. All had dilated tear sac and abscesses were present in seven. The operation was similar to West's and consisted in removing the mucous membrane over the inner surface of the frontal process of the superior maxilla and chiselling through the bone to uncover the lacrymal sac, which is dilated and usually bulges in towards the nose. A probe passed into the sac from the canaliculus will keep the sac in the opening, where a piece of it is removed by a forceps punch or else drawn down by forceps and cut off with a bistoury. The operation required fifteen minutes to half an hour. Average stay in the hospital was four days. Of 24 patients seen afterwards 19 were completely cured, *i.e.,* no watering of eye, no discharge of muco-purulent matter on pressing the sac and the intranasal opening was free. Two patients had slight watering of the eye and in three cases there was closure of the nose opening and discharge of muco-pus from the sac. Twenty-four patients who reported by letter showed 19 completely cured. The total record is 80% cured, 10% improved, 10% failures.

CONGENITAL CHOROIDEREMIA.

Connor reports a case of this rare condition in a soldier who complained of night blindness. The vision in daylight was found to be 20/20 in each eye. He had always had trouble going about after dark but was able to do clerical work. Parents not related, no family or personal history of eye disease. Pupils equal, irides brown. The ophthalmoscope showed cornea, lens and vitreous clear but the fundus glistening white with retinal vessels normal in size and distribution. In the macular region was a nearly normally reddish yellow area about twice the size of the disc, the macula showing as a slightly darker spot near the center of this patch. Elsewhere the sclerotic was exposed to view. Scattered over the fundus were a few pigment spots and a few small ciliary vessels. Both eyes presented nearly the same picture, except that the left macula was less regular in outline than the right. The fields of vision are markedly contracted as are he color fields. Nettleship in 1908 collected he cases in a paper on retinitis pigmentosa. hough he regarded it as absence of the chorid.—choroideremia. Jackson says Mauthner reorted the first case in 1872 and two years ater Koenig reported two cases and three thers have been described. The patients were all males and in all cases but one night blindness was mentioned.

EYE LESIONS OF INFLUENZA

Jackson reports on ocular lesions of influenza. The influenza bacillus resembles the Koch-Weeks but produces a different type of conjunctivitis. It produces the other lesions of influenza and forms a toxin having an affinity for the nervous system. As far as the eye is concerned this manifests itself in spasm or paralysis of accommodation, pareses, or paralyses of the extra ocular muscles, photophobia, transient amblyopia, optic neuritis, optic atrophy, neuralgic pain apparently not caused by local lesions and persistent asthenopia lasting months or years. The conjunctivitis caused by influenza occurs mostly in children under one year; it may be like a gonococcus infection or pseudomembranous in character but the majority of the cases are mild and without corneal involvement. Swelling of the upper lid without conjunctivitis may occur. Herpetic or dendritic ulcers of the cornea appear of neuropathic origin or corneal inflammation associated with uveitis. These conditions may arise after the influenza has run its course. Panophthalmitis of violent type may occur or a low grade chronic inflammation that proceeds to shrinking of the eye-ball without any acute symptoms. The ocular disease may be metastatic. Uveal infection by way of sinus or from focal infection may arise. Cellulitis or abscess of orbit may be a primary manifestation of the disease or occur later, and in connection with sinus disease. Toxic amblyopia and retrobulbar neuritis have been reported. A few cases of retinal disease have been seen. Glaucoma is not very rare. Senile cataract may be accelerated by the influenza.

OPHTHALMOSCOPY BY RED FREE LIGHT.

Von Der Heydt describes some ophthalmoscopic examinations made with Vogt's red free light. By this the yellow color of the macula can be seen. The retinal fibers are much more evident. In post-neuritic atrophy as well as in primary and glaucomatous atrophy and in that complicating retinitis pigmentosa and fracture of the base of the skull there is found a white marble-like mottling of the surface of the retina. One case showed a thin white line on each side of the vessels which could not be seen with the usual light. In retrobulbar neuritis (eight cases) there was found absence of striation in the retinal fibers and a substitution therefor of the marbleized zone in the papillomacular bundle. Vogt describes honeycomb changes in the macula in retinitis pigmentosa and also after injury. Some such condition as this is present in cystic degeneration of the macula and may precede "hole in the macula." Delicate opacities in the vitreous and deposits on the lens are better seen by the red free light.

FIELDS IN GLAUCOMA.

Van der Hoeve (reviewed in *British Journal of Ophthalmology*) insists on the importance of searching for scotomata near the blind spot in glaucoma. In Bjerrum's method a scotoma is projected thirty-six times its real size instead of only six. The characteristic feature is a scotoma starting from the blind spot and semi-circling the fixation point and ending abruptly at the horizontal meridian. This scotoma may be present in every case of chronic glaucoma, in fact Priestly Smith states that if it were absent glaucoma could be almost certainly excluded. This scotoma is due to a defect in a bundle of nerve fibers which ends in the horizontal raphé of the retina. If the nerve bundle defect reaches to the periphery of the retina a sectional defect appears and the scotoma may reach to the periphery of the field or it may meet a general contraction of the field. Some of the authors' cases show that the scotoma may extend towards the fixation point and threaten the macula. He feels that in any case where the scotoma is up to ten degrees of the fixation point an iridectomy is contraindicated, as it may cause loss of vision and that a sclerectomy, either LaGrange or Elliot, should be preferred. From the cases reported Bjerrum's scotoma may begin as a relative defect for white, and blind islands gradually appear and finally the whole area becomes blind. Scotomata may appear not directly joining the blind spot at first. Scotomata, especially recent ones, may disappear after operation.

ANAPHYLACTIC CONJUNCTIVITIS.

Conlon suggests that some of the types of mild but stubborn conjunctivitis that so frequently baffle us and cause our patient to go from one oculist to another without relief may be due to the protein of common foods. Cases that occur year after year at about the same season suggest some recurring cause. One patient that Conlon saw had had all the usual varieties of treatment without shortening the attacks and external causes of irritation had been investigated. In one patient it has proved during two years that either tomatoes or strawberries would cause the attacks. He never had an attack unless he had eaten one of these foods and later an attack was found to be due to tomato catsup eaten on beans. The protein skin test used by Walker was employed in these cases. Eggs were found to be a very definite cause in one case where the patient had been in a state of constant discomfort for two years. Another case had a yearly attack clearly traced to eating flounders caught on an annual vacation.

CONCUSSION AND CONTUSION INJURIES.

De Schweinitz discusses injuries to the eye as seen in the war. The fundus lesions are caused either directly by blow or pressure on the eye ball or indirectly by transmission of concussion or shock. The first are lesions by contact, the second are lesions by concussion as violent displacement of air by explosion of a shell or transmission of concussion or shock through the bony facial structures. Externally there may be no manifestations or only edema or ecchymosis of lid. In eyes externally clear vitreous hemorrhages have been found. In commotio retinae vision may be completely lost for several days followed by a return, though a permanent reduction follows severe types. Lister says a lesion above or below the horizontal plane was found to cause a defect in the field out of all proportion to the local disturbance. Reduction of tension is common and may not always mean a perforating wound of the sclera. In these war injuries besides the the retinal signs of commotio retinae there are more numerous hemorrhages and the yellow tint of retinal haze endures longer though it may be more circumscribed. Wrinkling of the retinal layer has been observed. Lacerations of chorioid and retina and their vessels with hemorrhage and exudate are common especially at the posterior pole of the eye and near the papilla. Transudation and hemorrhage cause separation of chorioid and of retina. Secondary to these lesions come atrophy of chorioid and retina in spots and proliferating retinitis. All manner of opacities in the vitreous occur. The retina is pinned down by opaque plastic material. Holes at the macula are commonly observed. Extensive disorganization of the interior of the eye without rupture may occur. Injury to the optic nerve in the canal and cuts across the nerve usually end in atrophy as does hematoma of the optic nerve sheath. Avulsion of the optic nerve is not infrequent. The difference between concussion changes of fundus in military practice as compared with civil depends on the fact that in warfare the object causing the concussion or passing through the orbit moves with great rapidity.

COLORED RINGS ABOUT LIGHTS.

Colored rings or haloes about artificial lights is a symptom of glaucoma and is also observed in normal eyes and the best description of the varieties of these haloes was by Drualt in 1899 at the Congress of Utrecht. This year Sheard has an instructive account and explanation of these appearances. Certain types can probably be seen by every normal individual who looks for them. The size of the pupil has little influence on these rings. A small bright source of light viewed at any convenient distance will show surrounding the whole of the luminous source a general luminous glow with striae in various directions from the central light. This may be called the ciliary corona. Surrounding this is a ring presenting colors from blue to red from the center to the periphery. These phenomena seem to be universal. Under some conditions a second ring, fainter than the first and closely bounding it with the colors in similar order, may be seen. A very bright light and a large pupil favor the finding of this latter ring. The author discusses diffraction by circular apertures and by opaque discs at length, and mathematically concludes that the apertures or particles giving rise to the first ring have an average diameter of 0.0018 cm., and those producing the second ring an average diameter of 0.00083 cm. Schiotz found the epithelial cells of the cornea varying from 25 μ. to 40 μ. Drualt made similar estimations but thought that the diffraction was in Descemet's membrane. Drualt attributes the second ring to the lens fibers but Sheard advances evidence to show that this cannot be so and that the second ring is due to diffraction by particles smaller than those producing the first ring, perhaps the inner layers of the anterior epithelial portion of the cornea. The ciliary corona is without doubt due to the lens fibers and the striae to the lens star.

CORNEAL THERMO-THERAPY.

Weekers details his method of sterilizing corneal ulcers by heat. His view is that the microbes can have their virulence destroyed by heat not great enough to kill them outright and also not to injure the healthy tissue of the cornea. The author used a galvano cautery which can be kept at any degree of incandescence desired. By holding the cautery near a thermometer bulb a good idea may be obtained of the temperature at a short distance from the point, and in practice the glowing point is moved as near the surface of the corneal ulcer as possible without touching it. The progressive margin of the ulcer is especially treated, but no more than one minute at a time is necessary. The cornea should be kept moist, not allowed to dry. Such an application of heat is repeated two or three times at one sitting and a second sitting is not usually necessary for the ulcer usually does not progress. After chauffage the patient has no pain but is relieved, very different from after cauterization, and damage to the cornea is kept at a minimum. Shahan has designed an instrument which he calls a thermophore in which a metal tip can be kept at any desired temperature and held against the corneal surface to be treated for the requisite time. This enables us to be more exact and these methods promise much when we have learned by experience just how much heat is needed and how long to apply it.

Book Reviews.

Handbook of Mental Examination Methods. By Shepherd Ivory Franz, Ph.D., M.D., LL.D., Scientific Director and Psychologist, St. Elizabeth's (Government) Hospital for the Insane, etc. Second Edition. Revised and Enlarged, pp. 193. New York: The Macmillan Co. 1919.

This book is intended "to place in the hands of psychiatrists, neurologists, and students, methods of examination which have been successfully used in psychological practice to the end that the mental examination of patients may be conducted in a more systematic and thorough manner." Apart from a few minor alterations and additions this edition remains practically the same as the first with the exception of the addition of a needed chapter on mental testing in which Woodworth's method of testing emotional instability is given at length. The more complex psychological methods of mental examination are wisely omitted, only the practical tests being described. Since its first appearance in 1912 it has amply fulfilled its promise in becoming a leading authority on the subject within the field for which it was designed.

Lectures on Sex and Heredity. By F. O. Bower, J. Graham Kerr, and W. E. Agar. London: Macmillan and Company. 1919.

These lectures, delivered by the authors at Glasgow in 1917 and 1918, aim to state in simple terms the leading facts relative to sex in plants and animals, with suggestions on the use and effect of sexual propagation. The evolutionary aspect of this subject in plants and in animals is taken in the first four chapters; the last two are devoted to questions of heredity. In further lectures of this series, it is intended to deal with the distribution of inherited characteristics in sexually produced offspring. The chief topics considered in the present volume are the origin of sex in plants, the effect of a fixed position on the sexuality of plants, the reproductive process in animals and the manifestations of this process as adaptations to life upon land, and the fundamental Mendelian phenomena of heredity. The book should be of value not only to the medical profession but to the intelligent laity desiring to acquire a rational understanding of the biology of sex and its bearing on evolution.

Surgical and War Nursing. By A. H. Barkley, M.D. (Hon.) M.C., F.A.C.S. St. Louis: C. V. Mosby Company. 1918.

Today, surely more than ever before in the history of the world, has the appeal for nursing services been most urgent and today the world is keenly alive to the fact that surgery as it has been carried on in Europe would have been a most laborious task were there not skilful, willing hands to attend to pre-operative arrangements and after care. In this little volume a very successful attempt has been made by the author to outline such phases of the subject of nursing as would be of practical value in the average surgical case. There is much that a nurse must know which she is not always called upon to practice and thus the purpose of this book has been to take an intermediate position between a reference book and a text book. It contains a great many illustrations and it should prove a helpful book not only to the professional nurse, but to those outside the profession, who wish to render intelligent service in the home as assistants to the doctor or to the trained nurse.

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COÖRDINATION AND EXPANSION OF FEDERAL HEALTH ACTIVITIES.

In the control of diseases, coördination of purpose and unity of action are essential factors to success. At the present time, the health agencies of the United States are scattered among a number of executive departments, without a general central control necessary for concerted action. It has been suggested by Dr. B. S. Warren, Assistant Surgeon General, in an article published in a recent *Public Health Report*, that all these activities should be coördinated under one administrative head, with a cabinet officer in charge of the department of health, which should include all bureaus or parts of bureaus and divisions now engaged in such activities.

It may be of interest to review briefly the historical development of federal health activities. Practically all of the Federal health functions were exercised by the Marine Hospital Service until 1879, when a National Board of Health was created to continue in force for four years. In 1882 Congress failed to appropriate money for the maintenance of this organization and the Marine Hospital Service again assumed charge of the Federal health functions. In 1882, the epidemic fund was first authorized and laws were passed to extend the health functions of the Marine Hospital Service. In 1901, the name "Marine Hospital Service" was changed to the "United States Public Health and Marine Hospital Service," and in 1912 it was again changed to the "United States Public Health Service," with its investigative power increased. It is evident that the Public Health Service was intended to be the principal Federal health agency. For the performance of certain health functions, however, there have been authorized other departments and bureaus, including the Bureau of Chemistry, the Department of Agriculture, the Children's Bureau and Bureau of Labor Statistics, the Department of Labor, Bureau of Census, Division of Vital Statistics, Department of the Interior, the Interdepartmental Social Hygiene Board, and others. This division of health agencies has been criticized, and various suggestions have been made for improving the present system.

The Public Health Service has the authority to investigate human disease and control infectious and contagious diseases. In the conduct of this work Congress has appropriated $8,338,470 for the fiscal year ending June 30, 1920, to the Public Health Service. Of this amount $3,000,000 is to be used for public health work. As the performance of functions of the various executive departments authorized by Congress are also within the province of the Public Health Service, Dr. Warren has pointed out that there is an overlapping of functions, a confusion of effort, and a duplication of work; if the bureaus were to be provided with adequate funds, there might result very probably, jealous competition, duplication of work and waste of Government funds.

As public health is not a problem of separate age, racial, or occupation groups, but a problem intimately related in all its parts, it would be well to consider the possible advantage which might result from the coördination of those several bureaus under one administrative head. If this is to be done, it has been suggested that it would be desirable to create a department of health with a cabinet officer in charge, and transfer to this department all bureaus and divisions of the Government now engaged in such activities. The practicability of this change at the present time is a serious question. Dr. Warren believes that it would be possible to adjust the functions of the single bureaus to the Department of Health in such a way that there would be no loss of prestige to them. The Public Health Service would constitute the main foundation of such a department; its mobile corps of medical and sanitary personnel could be expanded to include in the commissioned corps, with the grades commensurate with their work, all of the scientists and specialists from the other departments acting as a whole under the supervision of the surgeon general and performing all the medical and sanitary duties for all the bureaus and divisions of the department. The same tenure of office, remuneration, commutation, and allowances should be given to members of the mobile corps as to the present commissioned medical officers of the Public Health Service. Under the general supervision of the secretary and assistant secretary of the organization, there would be an executive office in charge of the surgeon general and including three divisions: (1) Personnel, (2) States' Relations, and (3) Scientific Research, with the following twelve bureaus under the general supervision of the executive officer: Mental Hygiene, Child and School Hygiene, Rural Hygiene, Industrial Hygiene, Foods and Drugs, Public Health Information, Sanitary Engineering, Venereal Disease, Tuberculosis, Quarantine and Immigration, Hospital and Relief, and Vital Statistics, and Epidemiology. The secretary and assistant secretary should be appointed by the president by and with the advice and consent of the Senate; the surgeon general, deputy surgeons general, and assistant surgeons general should be appointed from the mobile corps for a limited term of office. Officers, on completion of their duty in charge of the executive office, should be returned to the mobile corps with suitable grades. Dr. Warren is of the opinion that this plan of organization of the departmental administration and the provision for a mobile corps will make possible more complete coördination of the Federal health activities than would be possible by another suggested plan to organize the department in independent bureaus and demobilize the present medical and sanitary corps of the Public Health Service.

Inasmuch as the greatest limitations to the Public Health Service are money and men, the advantages to be gained by combining resources should be considered seriously. By supporting existing agencies and bringing about their most efficient administration, with proper coördination between Federal, State, and local health activities, with adequate expansion of the interstate operation of the Public Health Service, and with the Federal aid extension plan, is it not possible that there might result a unity of action which would make possible greater progress in the prevention and control of preventable diseases than has been attained under the existing conditions?

VENEREAL DISEASE CLINICS IN MASSACHUSETTS.

A recent communication from the Commissioner of Health of Massachusetts has emphasized the importance of reporting cases of venereal disease to the State Department of Health and has outlined the treatment available for persons suffering from these diseases. The fact that since February 1, 1918, when regulations requiring the reporting of venereal diseases were put into effect, over nineteen thousand cases were reported by the first of August, 1919, by not over one-fourth of the physicians of the State shows that there are still a large number of cases who are endangering public health by lack of treatment.

For the treatment of venereal diseases, sixteen State-approved clinics have been established in convenient centers of the State. The purpose of these clinics is (1) to furnish special treatment for those patients having venereal infection, especially in the infectious stages of the disease; (2) to provide consultation service for those physicians who might wish such assistance; to distribute arsphenamine (Salvarsan or 606) free to those physicians who possess necessary practical experience in its administration; and (4) to furnish physicians with supplies of arsphenamine after the chief of the clinic has been satisfied as to their professional qualifications and familiarity with the special technique for the administration of the drug.

The question of need for arsphenamine is determined as far as possible by confirmatory Wassermann tests: in non-infectious stages, Wassermann positive tests are obtained before the arsphenamine is used. No fee for arsphenamine is charged under any circumstances. The privilege of any hospital, institution, or practitioner to receive arsphenamine may be discontinued if any charge is made for the remedy itself, for failure to submit reports of treatment or Wassermann tests, or otherwise abusing the privilege of receiving arsphenamine. This medical service is available in all parts of the State, and any physician may receive the assistance he desires at the clinic for the area within which he resides.

Between February 1, 1918, and August 1, 1919, there have been reported a total number of 19,218 cases of venereal disease, of which 13,444 were gonorrhea and 5,774 syphilis. During the month of July, 1919, 1,033 cases of gonorrhea and 330 of syphilis, making a total of 1,363 cases were reported. Of this number twenty per cent. were reclaimed to treatment, four per cent. no longer require treatment, it is impossible to locate twenty-one per cent., follow-up work is being conducted in the case of fifty-three per cent., and two per cent. have moved out of Massachusetts.

More complete coöperation from physicians is imperative to insure success in the control of venereal diseases. The State Department of Health is loath to believe that the remaining three-fourths of physicians who have not reported these diseases fail to do so from criminal negligence, but is of the opinion that indifference is responsible for a great part of the non-reporting. It is strongly urged that to avoid misunderstanding and to assist the State Department of Health so far as possible, due precaution be taken by physicians in reporting all cases of venereal disease coming to their attention.

THE FRAMINGHAM HEALTH DEMONSTRATION.

In 1916, the sum of one hundred thousand dollars was placed at the disposal of the National Association for the Study and Prevention of Tuberculosis by the Metropolitan Life Insurance Company for the purpose of conducting over a three-year period a community experiment in the control of tuberculosis at Framingham, Massachusetts. In order to determine the results of this demonstration and the practicability of continuing it, a committee was formed to estimate the value of the work already done. An unprejudiced and scientific analysis of the work has been made by the Appraisal Committee. The achievement of the Demonstration has been commended highly by the committee.

The Framingham Health Demonstration has given us our first opportunity to estimate the actual amount of tuberculosis in a typical American community. It has pointed out that the most effective practical way of controlling tuberculosis lies in the development of machinery for its early detection and for the hygienic care of persons affected or threatened with the disease. Medical examination showed that one per cent. of the persons examined were suffering from active tuberculosis, while there were more than this number of arrested cases. Statistics indicate a rate of nine or ten active cases a year to one reported death.

One of the most important of all the practical contributions made by the Demonstration has been to work out a medical consultation service, which has been adopted in sections of Illinois, New York, Ohio, Oklahoma, Vermont and Wisconsin. The fact that now there are nearly two hundred cases under observation, whereas there were only twenty-seven at the beginning of the Demonstration, indicates the success of this organized campaign for the discovery of tuberculosis. During the first year, forty-two per cent. of the new reported cases were of an advanced type; in the second year, only sixteen per cent. were advanced, and in the first five months of 1919 twenty-three per cent. The tuberculosis death rate has fallen from ninety-three per one hundred thousand in 1917 to seventy-nine in 1918. These figures indicate the importance of the Demonstration's work. As it would be difficult to determine the full value of this experiment in a three-year period, a continuation of the Demonstration has been recommended by the Committee on Appraisal and an additional sum has been contributed by the Metropolitan Life Insurancee Company for carrying on the work during the year 1920. It is hoped that further investigation will yield information about the theoretic factors which contribute to the development of tuberculosis. Special attention is to be paid to the intensive study of environmental conditions, in the home, the factory, and the community, with a view to discovering more accurate knowledge about the effect of various conditions upon the disease. The results already accomplished by the Framingham Demonstration give promise of further research of considerable value.

MEDICAL NOTES.

Unusually Low Autumn Mortality. A Favorable Sequel to the Influenza Epidemic.—Health conditions this fall have been the most favorable in years throughout the country. The records of the large states and cities and those of the life insurance companies, show no signs of a recurrence of the recent influenza epidemic. The mortality from other diseases is at an unusually low point. This may be due to the fact that the larger number of those susceptible were more or less immunized by contracting the disease last fall. There is no doubt also that the epidemic carried off prematurely a large number of persons who had other diseases, usually chronic, who would probably have died this year. The general average of the public health is, therefore, better than it has been for a long time. If there is to be any serious aftermath of the influenza epidemic of 1918 it will have to appear later, as it has not been shown thus far.

The extremely favorable health conditions of the present season are shown by the industrial mortality records of the Metropolitan Life Insurance Company. The low death rates among its policy holders for the months of July, August, and September were followed by favorable developments during October and November. Instead of the marked increase that is expected in these months, as compared with the summer months, the mortality in October was only very slightly in excess of that for September, and was much lower than the normal. Instead of the increase which is usually shown for November, the rate actually declined over eight per cent. from the figures for October.

The low mortality in November is due largely to a sixteen per cent. decrease in the death rate for tuberculosis. On the other hand, diseases of the respiratory system—more especially the pneumonias—increased considerably in November. Long experience has shown that this is virtually inevitable at this time of the year.

The year 1919, in spite of its bad beginning, will probably close as one of the best in the history of the country from the health standpoint.

Marquette School of Medicine.—The following appointments have been made on the faculty of the Marquette School of Medicine: Fred T. Rogers, Ph.D., formerly assistant professor in the department of physiology, University of Chicago, professor and director of the department of physiology; Otto F. Kampmeyer, Ph.D., formerly connected with the University of Illinois, associate professor of anatomy; Albert J. Bruecken, M.D., formerly pathologist and bacteriologist in Mercy Hospital, Pittsburgh, and demonstrator of pathology, at the University of Pittsburgh, junior professor of bacteriology; S. C. Henn, Jr., M.S., formerly fellow in the department of physiology, University of Chicago, instructor of physiology, and John Tilleman, A.B., assistant, in the department of pathology.

American Public Health Association.—The American Public Health Association will hold its convention in 1920 at San Francisco. The officers of the Association for the coming year are Dr. W. S. Rankin, Raleigh, N.C., President; John Armyot, Ottawa, William H. Robin, New Orleans, G. H. Sumner, Des Moines, Vice-Presidents; W. H. Hedric, Boston, Secretary; and Lee K. Frankel, Treasurer.

Infant Hygiene in Uruguay.—At the second South American congress of infant hygiene held at Montevideo, the conclusions of which have been published by the Minister of Public Instruction of the Republic of Uruguay, it was recommended that governments institute a campaign of prophylaxis and assistance for tuberculous children, removing to special schools all suspected cases; that instruction on the prevention of tuberculosis, syphilis, alcoholism, hydatid cysts, and paludism be given in all schools; that the principles of child-rearing also be taught in schools; that the strictest uniformity in the collection of statistics be enforced and that for infants a special death certificate be required in which the fact of illegitimacy and the dietary should be stated; that special precautions should be taken in the early conceptive period and continued till the completion of convalescence; that prizes and grants for nursing women in institutions of infant protection should be founded, and that midwives should be supplied to rural districts at the public expense; that prenatal prophylaxis of purulent ophthalmia and precautions against the introduction of trachoma by immigrants be insisted upon; and that dental dispensaries be attached to all schools.

Appointments at the University of Lyons.—Dr. Mouriquand has been appointed professor of general pathology and therapeutics at the University, to succeed Professor Lesieur, deceased, and Dr. Policard has been appointed professor of general anatomy and histology in place of Professor Renaut, who has retired.

Mr. Frick's Bequests to Medical Institutions.—The following medical institutions are to receive approximately five hundred thousand dollars each by the will of the late Mr. Henry C. Frick: Pittsburgh Free Dispensary, Pittsburg; Western Pennsylvania Hospital, Pittsburgh; Uniontown Hospital, in Fayette County, Pennsylvania; Cottage State Hospital in Connellsville, Pa.; Westmoreland Hospital, in Greensburg, Pa.; Mount Pleasant Memorial Hospital, Westmoreland County, Pa.; Braddock General Hospital, Allegheny County, Pa.; Homestead Hospital, of Homestead, Pa.; Children's Hospital, Pittsburgh; and the Allegheny General Hospital, Pittsburgh.

Appointment of Dr. R. M. Pearce.—Dr. Richard M. Pearce, professor of research medicine in the University of Pennsylvania, has been appointed director of the division of medical education of the Rockefeller Foundation. He has sailed for Europe in the interest of the Foundation.

Increase of Tuberculosis During the War.—At a meeting of the Congress on Tuberculosis Prevention in London, the Hon. Christopher Addison, Minister of Health, is reported to have stated that a great number of men have been added to the sufferers from tuberculosis because of the war. He suggested improved housing conditions as one of the most important of preventive measures.

BOSTON AND MASSACHUSETTS.

Week's Death Rate in Boston.—During the week ending December 13, 1919, the number of deaths reported was 220 against 295 last year, with a rate of 14.41 against 19.61 last year. There were 31 deaths under one year of age against 34 last year.

The number of cases of principal reportable diseases were: Diphtheria, 48; scarlet fever, 97: measles, 183; whooping cough. 62; typhoid fever, 1; tuberculosis, 37.

Included in the above were the following cases of non-residents: Diphtheria, 10; scarlet fever, 20; typhoid fever, 1; tuberculosis, 5.

Total deaths from these diseases were: Diphtheria, 4; scarlet fever, 1; measles, 4; whooping cough, 2; typhoid fever, 1; tuberculosis, 22.

Included in the above were the following non-residents: Diphtheria, 1; typhoid fever, 1; tuberculosis, 1.

Boston Medical Library and the Suffolk District Medical Society.—At a meeting of the Boston Medical Library held in conjunction with the Suffolk District Medical Society on December 17, the following addresses were given: "The Relative Value of Some Modern Methods of Diagnosis and Treatment of Chronic Peptic Ulcer," by Dr. Franklin W. White, and "The Diagnosis and Treatment of Diseases of the Colon," by Dr. Henry F. Hewes.

Cambridge Anti-Tuberculosis Association.—At the annual meeting of the Cambridge Anti-Tuberculosis Association, Dr. Eugene R. Kelley, Health Commissioner of Massachusetts, delivered an address on "The Present Tuberculosis Drive." The following officers were elected for the coming year: Eugene A. Darling, M.D., president; Mrs. Rufus P. Williams and Edward A. Andrews, vice-presidents; Miss Louise W. Jackson, secretary; E. Willard Phippen. treasurer, and the following board of managers: James T. Addison, John J. Ahern, Miss Mary L. Birtwell, Walter S. Burke, Mrs. Raymond Calkins, Rev. P. H. Callahan, Bronson Crothers, M.D.; Mrs. Davis R. Dewey, George L. Dow. Arthur Drinkwater, Alfred Fiderkiewicz, M.D.; M. E. Fitzgerald, Thomas Hadley, Mrs Franklin T. Hammond, Charles

M. Hutchinson, M.D.; Harry W. Joel, Mrs. Herbert S. Langfeld, Elie H. LaPierre, Felix McGirr, M.D.; Rev. Edson Reifsnider, J. Arnold Rockwell, M.D.; Mrs. Charles R. Sanger, John J. Smith, M.D.; William D. Swan, M.D.; Mrs. Joseph G. Thorp, C. F. Turner, Mrs. Charles P. Vosburgh, George C. Whipple, and Miss Sarah Yerxa.

Boston Floating Hospital.—The Boston Floating Hospital has opened recently at 40 Wigglesworth street a department which will take care of babies on shore during the winter and conduct special research work. Three houses of three stories each have been renovated at the cost of about $45,000. It has been announced that special attention will be given to perfecting medicines which will later be given to the children on the regular floating hospital. A special laboratory has been constructed for the use of Mr. Bosworth, a Boston chemist, who believes that the elements in cow's milk which are not needed by children but are necessary for calves are the causes for more than fifty per cent. of infant trouble encountered in bottle-fed babies. Mr. Bosworth has devised a system whereby these elements, calcium and phosphorus can be eliminated from the milk. The manager of the hospital is G. Loring Briggs, the superintendent, Miss Sarah A. Egan, and the supervising nurse, Miss Margaret J. Bruce.

Appointment of Dr. Goodpasture.—Dr. Ernest William Goodpasture has been appointed assistant professor of pathology at the Harvard Medical School.

Smallpox in Massachusetts.—The following statement relating to smallpox in Massachusetts has been issued by Dr. Stanley H. Osborn, epidemiologist of the State Department of Health. It emphasizes the value of vaccination, and points out that thus far this year there have been thirty-seven cases of smallpox in Massachusetts; of that number, only one had been vaccinated, seven years previous to his infection.

"The placing of the border quarantine against smallpox on the Province of Ontario, Can., November 26, by the United States Public Health Service because of a smallpox outbreak, brings forth again the ease with which smallpox increases wherever vaccination is not carried out, and the danger of an epidemic is always present in such communities.

"There have been 37 cases of smallpox in Massachusetts up to the present time this year, most of the cases receiving their infection from without the State and, in certain instances, those cases infected unvaccinated persons. Thus the possibility of an outbreak is constantly present in communities, particularly where the unvaccinated individuals form the major portion of the population. Fortunately this does not exist, to any great extent, in Massachusetts, and the Commonwealth has been comparatively free from smallpox.

"Many of the recent smallpox cases received their infection in Canada, and because of the hundreds of cases in the province of Ontario, the United States Public Health Service established the border quarantine.

"In Massachusetts for the period 1915-1918 there were 136 cases of smallpox, 19 of whom died. Of this number 17 had never been vaccinated.

"Up to November 28, 1919, there have been 37 cases of smallpox in Massachusetts during the year, but one case being in a vaccinated individual and the vaccination was done over seven years ago. Thus the value of vaccination, as a prevention against the disease, is again shown. The mildness of the disease in vaccinated individuals, with practically no marring of the features, makes it the ideal preventive and is used by those individuals and physicians who are acquainted with the malignant and disfiguring type of the disease, such as occurred in the State in 1915 and 1917.

"The vaccine most widely used to prevent smallpox in Massachusetts is that prepared and furnished in capillary glass tubes by the biological laboratories of the State Department of Health."

NEW ENGLAND NOTES.

New England Ophthalmological Society.—At a meeting of the New England Ophthalmological Society held in Boston on December 16, the following papers were read: Report on Cases of Retrobulbar Neuritis," by Dr. Allen Greenwood, and "Demonstration of the Beach Scoop Perimeter," by Dr. S. J. Beach.

The Massachusetts Medical Society.

NEWS FROM THE DISTRICT SOCIETIES.

Dr. Howard A. Streeter, Director Division on Venereal Diseases, State Department of Health, has accepted the invitation of the Committee on Public Health, Massachusetts Medical Society to serve on its list of speakers on public health subjects for District Societies. Dr.

Streeter will talk on laboratory errors and can furnish an illustrated lecture with film of 30 minutes' duration; subject, "Health and Disease," showing the progress of syphilis and gonorrhea. This is a scientific lecture throughout. Dr. Streeter's services may be secured for District meetings by addressing the Secretary of the Committee, Dr. Annie Lee Hamilton, 141 Newbury Street, Boston.

Obituary.

JOHN HENRY GIFFORD, M.D.

Dr. Gifford, who had been ill with heart disease since early last summer, died at his home in Fall River December 14, 1919, at the age of sixty-one. He had been a Fellow of the Massachusetts Medical Society since 1886, and previous to 1915 had been a member of its Council and a nominating councilor for the Bristol South District Medical Society.

John Henry Gifford was born in West Falmouth February 6, 1858, the son of Azariah S. and Lois (Bean) Gifford. After preparatory schooling in his native place, he attended Haverford College, an institution supported by the Society of Friends in Haverford, Pa., whence he was graduated in 1879, being the valedictorian of his class, and from which he received the degree of A.B. He then attended Harvard Medical School in Cambridge, graduating in 1884 and acquiring the degree of M.D.

September 14, 1886, he was married to Miss Phebe E. Newton of Fall River, who, with one child, Newton R. Gifford, 216 Prospect street, survives him.

Dr. Gifford entered on medical practice in 1884, and continued therein, in Fall River, until forced by illness, a few months ago, to withdraw from all activity.

He was always most friendly to public causes, particularly those of charity and education, and in such connections as he appeared with papers or addresses manifested excellent public spirit and a sense of the value of true professionalism. He was always ready to assist poor and unfortunate men and women, and at the first attempt to establish hospital service in the city was among those most serviceable. When the Emergency Hospital was established, Dr. Gifford became its first president, and later served with efficiency and attentiveness as an official of the Union Hospital. He was once president of the Fall River Medical Society. He was for some years associate medical examiner of the Third Bristol district, and was long a physician of the Highland Hospital, a member of the American Medical Association and the Massachusetts Medical Society.

His political relation was with the Republican party and his religious connection was with the First Congregational Church.

Correspondence.

TO THE MEMBERS OF THE MEDICAL PROFESSION.

Lynn, Dec. 26, 1919.

Dear Fellow-members:—

On Christmas Eve, while taking his car from his garage, Dr. Hamlin P. Bennett of Lynn was set upon and beaten to unconsciousness, and now is in a precarious condition in the hospital, the gangsters escaping in a stolen car.

Such an attack may be made upon any of us, equally without provocation, and for our own protection as well as an expression of interest in Dr. Bennett, it is proposed to raise, by subscription, a fund to be offered as a reward for the detection and conviction of Dr. Bennett's assailants.

In order to be most effective it is important that this be done promptly, and subscriptions have already been offered in sums varying from five dollars to one hundred dollars.

The force of this movement obviously depends upon the size of the fund, and only a prompt and liberal subscription will insure results.

Please send your subscription at once to Dr. John W. Trask, 171 Lewis Street, Lynn, Mass.

William T. Hopkins,
President, Essex South District Massachusetts Medical Society.
John W. Trask,
President, Lynn Medical Fraternity.

Miscellany.

SOCIETY NOTICE.

Essex North District Medical Society.—The semi-annual meeting of the Essex North District Medical Society will be held Wednesday, Jan. 7, 1920, at noon, sharp, at Unity Hall, Main Street, opposite City Hall Park, Haverhill, Mass.

Dinner will be served at 12 M. and followed by the business meeting. The following papers will be presented:

The Physician's Responsibility in Dental Disease by George H. Wright, D.M.D., of Boston, Lecturer on Dental Hygiene, Harvard Dental School (40 minutes).

Some Thoughts on Influenza, by Timothy Leary, M.D., of Boston, Professor of Pathology, Tufts Medical School (40 minutes).

The Need of Pre-Medical Education as a Requisite to the Acceptance of a Degree by Boards of Registration in Medicine, by W. P. Bowers, M.D., of Boston, Secretary to the Board of Registration in Medicine (20 minutes).

The annual assessment may be paid at this meeting.

J. J. O'Sullivan, M.D., *President*,
J. Forrest Burnham, M.D., *Secretary.*

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Address.

PRESIDENTIAL ADDRESS OF DR. JOHN B. WHEELER, BURLINGTON, VT., AT THE ANNUAL MEETING OF THE NEW ENGLAND SURGICAL SOCIETY, BOSTON, OCTOBER 28TH AND 29TH.

Members of the New England Surgical Society:

It is a great pleasure to me, as it must be to all of you, to be present at our Society's return to consciousness, after the coma induced by the war. Animation has been suspended so long that the prospect of its restoration began to seem somewhat doubtful, but a gathering like this dispels all misgivings of that kind. We now have good reason to expect that the Society will resume the work which it began so well three years ago, and as time goes on "add materially to the sum of surgical knowledge," as Dr. Mixter said in his presidential address at the inaugural meeting in 1916.

We are happy also by reason of the presence of our distinguished guests from England, Sir Anthony Bowlby of London and Sir Robert Jones of Liverpool. In the name of the Society, I bid them the heartiest of welcomes.

Throughout nearly the whole of the last three years, nothing was heard of the New England Surgical Society; for the reason that all of its members, who were not disqualified by age or physical defect, or prevented by the nature of their work, or the condition of their families were serving their country, in camp or abroad; while those who were unable to leave home, were so busy with the extra work entailed by the absence of their colleagues, that they had no time for Society activities. But the Society has accomplished something, notwithstanding. The transactions of our first meeting would have been creditable to any scientific body, and though the Society as a whole has done nothing since that meeting, many of its members have made war records, of which we all may justly feel proud. Another, and what seems to me a most important thing, was accomplished at our meeting; namely, getting acquainted. I hope that it has given all of us as much pleasure as it has me. It was very pleasant to meet many men whom I had never seen before, but had long known by reputation, as well as to make the acquaintances of others, of whom I, in my remote corner of the Green Mountains, had never heard, but whom I found to be excellent surgeons and mighty good fellows. To quote Dr. Mixter again, "The great value of medical meetings is to meet men, to know men, and to get their views." Judged by this standard, our first meeting was a most valuable one.

Except in a very general way, a forecast of the Society's future work is impossible, as it must change with the progress of the science and art of surgery, as well as with the course of human events. But there are some matters of immediate importance to surgeons, which demand, and I am sure will receive careful consideration and intelligent action on the part of our Society. Hospital standardization is one of these. Much has already been accomplished in this direction, and not a few of our members have had a hand in the good work, but much more would be accomplished if each one of us would do his utmost to bring the hospitals with which he is connected, up to a standard which requires, among other things, properly kept case records properly followed up, proper laboratory facilities, systematic instruction of interns, and autopsies held in every possible case.

Another matter of great importance to us as surgeons is surgical education. What kind of training before and after graduation, is best calculated to give a young man the diagnostic accuracy, the sound judgment and the operative skill which he should have before taking up surgery as a specialty? The question has been discussed considerably, but the last word has not been said, by a good deal. Of course it never can be, really, for surgical education must change with the progress of surgery, but there is much to be said and done about education for the surgical practice of today, and this Society is capable of contributing materially to the solution of educational problems.

The other problems which most naturally claim our attention, are those which are directly involved in the practice of surgery. So many of them have been solved in the life time of even the youngest of us, that none of the remaining ones, baffling and forbidding as they appear, seem impossible of solution. Experience has often shown us the folly of hasty and ill-considered adoption of ideas which run contrary to its teachings, but it also shows the stupidity of declaring a thing to be impossible merely because we do not see how it can be done, or because it fails to fit in with our individual experience.

Some of us have had the great privilege of personal acquaintance with the late Dr. Henry I. Bowditch and to all of us he is undoubtedly known as New England's leading authority on thoracic diseases during a large part of the latter half of the nineteenth century. He was no surgeon and never made any pretense of being one, but he was enthusiastically interested in every department of medical science and his realization of the great surgical future which was just opening as he was going off the stage, was really prophetic. I have frequently heard of an occasion. not many years before his death, when he attended a meeting of the Surgical Section of the Suffolk District Medical Society. The subject of gall stones was under discussion. The operative treatment of this condition,—in fact, the possibility of surgical interference in the whole upper abdomen, was just beginning to occur to surgeons at that time. The consensus of opinion among the surgeons present was very conservative. No one seemed to consider it practicable to cure gall stones by removing them. When the discussion ceased, Dr. Bowditch rose and asked why it was that none of his hearers, among whom were some of the ablest surgeons in New England, was willing to lead the way in performing operations of this kind, adding that he was convinced that some one would undertake the task and that in a few years such operations would be done frequently and successfully. He urged Boston surgeons to seize the opportunity and not lose the credit of being pioneers in the movement.

His remarks were coolly received. As has been the case with many a true prophet, his prophecy was unheeded. Men were even heard to remark to each other, as the meeting broke up, that Dr. Bowditch was in his dotage and that his friends ought to prevent him from talking in public on subjects he knew nothing about. But events proved that he did know, much better than any of his critics, what he was talking about, and the result of their shortsightedness was that, in this country, surgery of the upper abdomen was developed, not in Boston and New England, but in Rochester, Minn., and in the Middle West.

At the present day, there are many members of this Society who are not open to Dr. Bowditch's criticism. Their work in brain surgery, gynecology, orthopedics, genito-urinary surgery, and fractures and dislocations, to say nothing of other fields, is evidence that Boston surgeons are doing their part in promoting the progress of surgery. But those of us who inhabit the smaller towns of New England, has not the criticism some application to us? Are we not leaving too much of the work to the Boston men? It is true that we have not the advantage of living in a great medical center, but that advantage is not a necessity to the performance of good work. We country men may not be able to equal the achievements of our Boston colleagues, but if each of us will contribute his mite to the cause of surgical progress and see to it that his mite represents his very best effort, I venture to say that the effect on the Society as a whole and on its individual members will be startlingly beneficial.

In this new beginning of the Society's life, we all hope and expect that it will occupy a position of influence in the medical profession. It is already a body of which we are proud to be members: let us try to make it a Society whose honorary membership will be a prize to be coveted by surgeons from other states and countries. Let us not be content with keeping up with the procession: let us do our utmost to lead it.

Original Articles.

DIAGNOSIS OF THE LESIONS OF THE NERVOUS SYSTEM PRODUCED BY VIOLENT EXPLOSIONS IN CLOSE PROXIMITY WITHOUT EXTERNAL LESIONS.

By Tom A. Williams, M.B., C.M., Edin., Washington, D. C.,

Lecturer on Nervous and Mental Diseases, Howard University; Neurologist to Freedmen's Hospital; Corresponding Member, Neurological Society of Paris, and of the Academy of Medicine of Rio Janeiro, etc.

The name commotion has been used without sufficient precision, being applied equally to the result of physical disturbances of the nervous system and to the syndrome which occurs on account of the psychic impression caused by the explosion. The individual tendency of people to be mastered by the words they use has led to much confusion in consequence. Certain observers make a diagnosis of hysteria in all cases where explosion has not produced visible wounds or where neurological examination has not organic lesion. The tendency to such diagnosis is due to the fact that a large proportion of the cases recover in a few weeks or even days after violent concussion. However, that this generalization is quite unjustified is proven not only by the considerable number of instances where patients whose symptoms have been thought purely hysterical have developed shortly afterwards definite physical signs which at first were absent, but also by the results of experiments with animals subjected to violent explosions.

In a series of experiments producing concussion on rabbits results were as follows: Animals in a large meshed cage showed only slight and evanescent stupefaction. Rabbits which were in a ditch and subjected to explosion evidenced dyspnea from the gas remaining in the trench. When the animals were suspended above the level of the residual gas some of them showed no symptoms, others were depressed and inert, while others showed marked excitement, one of them fleeing in screams whenever approached. But in nearly all there was an increased respiratory rate for half an hour. There was no correspondence between the first symptoms and the progress of the case; for instance, an animal which would lie inert with contracted pupil would appear quite well the next day, while another which seemed much less affected died the following day. Two animals which seemed to recover completely within a day died eight and thirteen days later.

COMMOTION IS THE REAL CAUSE OF MANY OF THE SYMPTOMS WHERE THE SKULL HAS BEEN INJURED

Great stress has been laid upon the "subjectiveness" of some of the functional disturbances which prevail in patients who have been commotioned by a violent explosion. Those symptoms which have been considered "subjective" are accordingly treated with the lightness which is unfortunately usually attached to that word in clinical medicine. This tendency has been the more strong because of the fact that so many of the men who have been commotioned have been able to go straight back into the line after the occurrence, even when in the exceedingly dazed state. Apparently not many of these men relapsed, and hence it was supposed that the complaint of the patients who have been evacuated to the interior were largely products of cultivation, suggestion, or simulation. The uniformity of the complaints did not seem to refute this reasoning, for do we not remember the uniformity which we were taught to expect with regard to the phenomena of hysteria, which we now know to have been in the main phenomena of culture. The "general" nature of the chief features, namely, headache, cerebral over-fatigability, insomnia, nightmares, changeableness of humor, dizziness, absences, a sensation of cloudiness, were supposed to be the standard complaint of the so-called "neurasthenic," whose disease no pathologist attempted to locate in any particular area of the cerebrum.

The fact that this series of syndromes also showed itself conspicuously in patients who had been trephined did not obviate this interpretation, for observers are unanimous in declaring that the functional disturbances after injuries to the skull are dependent neither upon the seat of the lesion nor upon the apparent gravity of the trauma: for it is observed that functional disturbances showed themselves just as conspicuously in patients in whom only the outer table of the skull had been injured as in patients with deep penetrating and crushing wounds of the brain itself. Indeed, if anything, the latter patients were less prone to serious and long-continued inconveniences than the former. The accompanying table is based upon a study of 470 cases of wounds of the skull. Of these cases only 83, however, were utilized for only of these was it possible to have detailed information about the site, extent, and depth of the wound, and about the details of the surgical operation and of the immediate and secondary complications.

Table I.

	Lesions of the External Table		Lesions of the Internal Table		Open Dura Mater		Lesions of the Cerebral Substance	
	18 cases		28 cases		7 cases		30 cases	
	No. of Cases	Percentages	No. of Cases	Percentages	No. of Cases	Percentages	No. of Cases	Percentages
Headache	16	88.8	25	89.2	6	85.7	20	66.6
Vertigo	9	50	16	57.1	3	42.8	13	43.3
Blurred vision	5	27.7	8	28.5	2	29.5	5	16.6
Fatigability ..	2	11.1	6	21.4	2	29.5	15	50

These general symptoms after skull wounds have been called atopic, *i.e.*, non-localized, by Grasset, because a careful analysis in his clinic of each series of cases studied not only by himself but by Villaret, Mairet, Pieron, Mignard and others, showed that even the clouded vision and the dizziness were unrelated to wounds in any particular locality, and that even the headache by no means predominated at the site of the cranial breach, although of course there often occurred in this area neuralgic phenomena which, however, were quite distinct from the general headache.

Now, these atopic symptoms which usually eventually cease almost completely in every case, are the same symptoms as those which are manifested by commotioned patients who have had no wound at all. Furthermore, in the latter patients, where opportunity for investigation has existed, there have been found very decided abnormalities of the cerebro-spinal fluid, almost invariably hypertension, usually hyper-albuminosis, and sometimes lymphocytosis as the cases increase in gravity. Again, a considerable number of commotioned patients have shown for a short period, in addition to these symptoms, definite, even when slight, physical signs of focal lesions of the brain.

Thus the resemblance of the two syndromes is so striking that their identity is manifest, and the problem of the nature of the persistent functional disturbances in both can be studied together as a whole. Of course, it is very easy for anyone to declare that he has headaches, is easily fatigued, has attacks of dizziness and blurred vision, especially when exertion is demanded; that he cannot sleep, and has nightmare; and it is not difficult to change one's humor. So that to a superficial observer it might be justifiable to characterize these individuals as perseverators, if not simulators. But, the syndrome is accompanied by other phenomena which are not of a simulable character. For instance, a walk of half a mile will not produce in a simulator hollow eyes, a shrunken and pallid face, profuse sweating and diminution of blood pressure from all of which he will recover only after several hours, nor can one very readily simulate the vascular congestion immediately provoked in such patients when they stoop down, nor will simulation maintain the vascular turgidity of the face and the modifications of the pulse which so many of these patients show. Nor can the modifications of the oculo-cardiac reflex usually seen in these patients be simulated. Nor can the modifications of heat regulation which they show. Furthermore, a simulator who suffers from short absences will be almost certain to declare that they are prolonged. Moreover, he will stagger when he has attacks of vertigo and prolong and exaggerate this phenomenon. Again he will seek to provide occasions to manifest his malady instead of seeking to avoid them as does the true *commotionné*. Again, a simulator will not confess that his headache is ever ameliorated, whereas the true *commotionné* is only too glad to be free of it if it is only for a few hours, and will readily confess that it tends to improve at night.

LABYRINTHINE REACTIONS.

Modifications of the labyrinthine reactions were present in 87% of 46 soldiers, of whom 28 had head wounds and 18 were merely commotioned.

In only 22 of these was the hearing diminished. A large proportion not exactly stated, however, had tinnitus. In only seven was the Romberg sign present, and none of the patients presented other neurological signs.

The most fruitful test was the galvanic one which is much simpler than either irrigation or rotation, and which does not produce to the same degree the obnubilation which is sometimes very disturbing to the patients. This usually appears after the vertigo and before the turning of the head. The patient cannot reply to questions. He feels stupefied—his ideas become confused. It may persist for minutes after the stimulus has ceased, and even produce loss of consciousness. It may occur when there has been no vertigo, nor deviation of the head. It is most significant when it occurs after stimulation of one labyrinth and does not do so when the diseased side is stimulated.

The most objective part of the test is the inclination of the head, which was modified in 40 of the cases, either by a failure of reaction on one side or by the need of a much stronger current to provoke it, or by change of direction from the normal, which is towards the positive pole, sometimes accompanied by a turning of the chin towards the negative pole. The most common modification is that the head turns away from the injured side whichever way the current is able to pass, along with a rising of the threshold of excitation.

This increase of threshold occurs only in 34.7% of the cases, the limit of the normal being regarded as 5 milliamperes. In seven of the sixteen cases the threshold for both ears was raised, while in nine cases one labyrinth was excitable with the normal amount of three milliamperes. Of the six *commotionnés* who showed a raise of threshold, three presented it on both sides.

When the wound was lateral the increase of resistance to the current was on the same side in six cases, and on the opposite side in three cases, where, however, the wound was large, both parietal and temporal regions being damaged. In all cases, when the threshold was raised for both sides, that traumatised was always the greater. In three cases showing fissure of the occiput in the middle line there was a lowering of the threshold on both sides.

Vertigo is provoked with an only slightly greater current than is inclination of the head, but the two reactions are proportional in health. In disease, however, there may be a great disproportion, the head not inclining until the current has been increased by over 10 milliamperes, whereas it should normally deviate with an increase of not over five. Sometimes the inclination is slow, sometimes abrupt. It may be preceded by oscillations—sometimes even towards the opposite side, or antero-posteriorly. In rare cases the reaction is reversed, but the usual modification after commotion is for the inclination to occur always toward the same side whatever the direction of the galvanic current. In occipital wounds, however, the inclination is sometimes before or backwards.

Other reactional movements of the patient, such as that exemplified by the changing of the plane of the extended arm, are also modified during galvanic stimulation of the labyrinth. In cases where the reactional movement does not occur in the course of a galvanic stimulation which produces vertigo and nystagmus, we can infer a lesion central to the bulbo-pontine region and we should find other clinical signs of disorder of the cerebellar apparatus. The angular deviation of the walk, is another valuable method of searching for disturbances of the equilibratory function.

Any of these tests can be made by means of irrigating the ear also. In many cases irrigated, there was a great discordance between the responses to galvanism, which affords a test more delicate than either the tests by rotation or douching, although, of course, it has not the analytic value of these.

MODIFICATIONS OF THE CEREBRO-SPINAL FLUID.

These occur in a considerable percentage of cases of commotion. They do not usually appear till the end of the second day. They consist of a considerable increase from the normal 30 mm. of water up to 60 or even over 100 of the intrathecal pressure as revealed by a manometer such as that of Claude which reveals an increase of pressure which may continue for several weeks or even months.

It is a little simple aneroid manometer carefully graduated in centimeters of water which is connected by means of a rubber tube to a three-branch cock. The latter, according to its position, brings the needle into communication with the outside or with the manometer.

In the *first position*, a very fine wire is introduced which allows us to clear the needle or to inject a solution of stovaine or novocaine for the anesthesia: lastly and most important the cerebro-spinal fluid can be collected should any escape.

In the *second position*, the pressure of the cerebro-spinal fluid is measured.

With this apparatus, the tension may be evaluated from the beginning without any loss of fluid.

When one is used to performing lumbar puncture, it is sufficient, before crossing the "ligamentum subflava," to turn the cock to the position 2, which connects the needle with the manometer. As soon as the needle has penetrated into the arachnoid, the pressure is shown by the manometer.

If the operation offers any difficulty, the cock must be turned into position 1, and the mandrel should be introduced.

There is nearly always increase of albumen, reaching from 0.50 to 1 gr., or even more after precipitation by acetic or nitric acid.

It should be measured with an albuminometer consisting of a tube of 5 mm. in diameter and graduated in distances found empirically to correspond with one centigram per litre of cerebro-spinal fluid according to the model of Sicard.

In the absence of a graduated tube an approximation can be made by observation of the precipitate when the clinician is experienced.

This is out of proportion to the cytological reaction, which may be slight or even absent. Indeed, a low cell count, along with the other symptoms plead strongly for a commotional reaction as against an inflammatory or syphilitic one.

The proportion of glucose is not disturbed in these cases except for a slight increase. There is no diminution of chlorine.

Of course in the early period there may be hemorrhagic complications which change completely the above picture and show themselves as bloody discolorations, often very faint, and the presence of the erythrocytes and leucocytes, and later on by the presence merely of chrystals of hematin.

THE CEPHALO-RACHIDIAN FORMULA IN CEREBRAL COMMOTIONS.

From the observation of about 50 *commotions* studied in a center of the army it is shown that:

1. The percentage of abnormal rachidian fluid was 50%.

2. The habitual existence of a typic commotional formula characterized by hyperalbuminosis (0 gr., .85 to 1 gr. per litre) above all other important cytochemical modifications.

There is noted the absence of meningeal participation (normal chloride and permeability: no leucocytosis), the absence of infection, no fibrine, no hypoglycosia) a marked tendency to hypersecretion (hypertension, frequent hyperglycosia, habitual hypoleucocytosis 0.3 to 0.7 elements for a square mm., perhaps because of the dilution of the fluid). The contrast between the hyperalbuminosis and the normal or diminished leucocyte rate constitutes the albumino-cytologic dissociation or the most often, the albumino-cytologic inversion.

The commotional formula is finally characterized by its evolution: ordinary appearances of the albuminosis after two or three days, habitual disappearance in the course of some weeks or months, the indefinite persistence or very slow regression of the syndrome. This cephalo-rachidian reaction of pure commotion without external wounds is met with in all its characters in many commotions associated with wounds of the scalp where the importance of the nervous lesions may be misappreciated because of the slightness of local lesions. This rachidian formula by its cytologic percentage and its post-traumatic evolution allows us to assert at the same time the reality and the organicity of the commotion.

Psychogenetic Consequences. The preceding considerations show that it is comparatively simple to diagnosticate (and the instances of these are not few) where there are disturbances of physical origin.

It must not be forgotten, however, that lumbar puncture has a powerful suggestive influence therapeutically. It is in this way that one can explain a case reported by Pastine where an officer showed a slight lesion of the pyramidal tract, some cerebral dysargia, and intracranial hypertension besides subjective symptoms of pain in the back, deafness, and diminution of sight, as well as slowing of the intellectual faculties, indifference, and amnesia. After a lumbar puncture, which did not improve him considerably the pain of a second attempted puncture which failed caused a sudden and almost complete cure. We have a right to suppose that the painful puncture simply coincided with the period when the physical symptoms had retroceded leaving, however, the patient in the belief, and with the feeling that he could not think or feel or remember, the impression and the inertia of the severe commotion still dominating his mind. The mechanism is quite similar to that described in 1909 in the traumatic neurosis, from a discussion of which I quote the following:

"The initiator of symptoms may, of course, be an actual accident of disease; and equally so it may be derived from the mere idea of injury or disease, so that the clinical problem to be analyzed may be exceedingly complex. . . . The commonest of the fears which result from accident or injury is that of bodily harm. It is difficult for a person of this type, when ignorant of his own structure and functions, to shake off the foreboding created by an impressive catastrophe: and it must not be forgotten that what others regard as trifling, the victim may look upon as catastrophic; judged by its possible effect on him. Prepossession by the idea of one's own disability is an inevitable consequence. This leads to abstraction from and inattention to the affairs of ordinary life which, if not trifling by comparison in the patient's mind, at least cannot claim the attention properly needed. Hence ensues the well-known diminution of the capacity to think clearly and to attend to current affairs.

Other Psychological Disturbances. At the commencement, inertia is decided with marked impairment of altruistic and even of family sentiments, and complete loss of the finer feelings; even the more elementary feelings may suffer, as both appetites and taste may cease for a time.

Later on irritability replaces inertia: it is accompanied often by an exaggerated egotism, with hostility to any interference with immediate desires. Sometimes, however, fear dominates rather than rage: either of these may occur in fits. In the mildest cases these attacks occur only in nightmare.

The tendency to active dreaming of the patients—even while partially awake—encourages a formation of hallucinations and mild delusions in which the patient may, or may not, relieve for the time.

Amnesia. In testing the intelligence of the patient during recovery it is very important to obtain his coöperation, so that the patient may think it is to his interest to make the most of his abilities: accordingly it should be indicated in his presence that his responses are important in our eyes. But the doctor must take precautions against medical suggestion.

Psychiatrists have been too long content with psychoreactional descriptions which do not help us very practically. Now, in some of these cases reports have been made of icterus, and in other of glycosuria, polyuria or retention of chlorine; while in the others modifications of the blood pressure have been ascertained, and in many a very marked vasomotor instability with dermographia of various types. In some there are modifications of blood coagulability. Disturbances of gastric and intestinal motility have been observed; and some cases show an alternation of excitation and inhibition of different functions of the autonomic and sympathetic nervous systems including pupillary phenomena. It is needless to go into a minute description of the autonomic and sympathetic syndromes which show themselves more or less purely in these cases, but their number presents an unexampled opportunity for a detailed investigation into the clinical pathology of these conditions.

This syndrome may occur quite apart from any actual shock or explosion. It may express itself as the summation of a long period of dread or of a series of alarms. Indeed, in some cases there has been no active conscious dread but there gradually supervenes a state of inquietude; the patient's nerves are on edge, as he expresses it. (See Emotions in Warfare, *N. Y. Med. Jour.*, 1919, Sept. 12.)

Complications. These symptoms seem so clear as to raise no difficulty in the diagnosis of such cases. But they are pure only in the severer cases. In most of the milder cases, they are complicated by either or both of the aforementioned conditions of entirely different mechanism, *viz.,* hysteria and hyperemotivity. These complications are frequent. The patient is often easily disturbed by noises which may make him anxious, somewhat confused; he is often preoccupied by his state of health, and loses his courage and belief in eventual recovery. Sometimes a state of chronic or highly irritable anxiety complicates, but the mechanism of this is different from that of commotion itself, as has been explained.

These patients are particularly liable to pithiatic (symptoms created by suggestion) accidents, more especially when the real commotion has not been severe. It is the coincidence of the rapid cure by suggestion of these mild cases with the fact that many patients without actual commotion present a picture resembling it but due entirely to psychogenetic causes, that is responsible for such opinions, that commotion owes its effects to impressions upon a vivid imagination prepared either by heredity or by exhaustion.

DIAGNOSIS.

The most manifest and rapidly ascertained signs of commotion are the general muscular relaxation, including that of the face, the muscles of the hands and the hypo-tension of the pulse, the dilated pupils and the diminished reflexes, both tendinous and cutaneous. The only one of these symptoms which can be simulated is the general muscular relaxation, but this is not the kind of reaction which simulators are apt to attempt to imitate.

The above condition may be quite temporary. In order that the prognosis be made quickly it is advisable to examine the cerebro-spinal fluid. If after twenty-four hours, no excess of albumen is found, the diagnosis of commotion can be excluded. The presence of albumen, on the contrary, should forbid the sending of the patient back to duty, although he appears functionally to have recovered. Its presence is believed to be due to damage of the choroid plexus, which permits the transudation without diapedesis of leucocytes. Indeed, the lesions may be severe enough to permit of the transudation of erythrocytes, in which case there will be a yellow tint of the spinal fluid.

There is one fallacy only in relation to this diagnosis, namely, that in conditions of chronic compression such as results from tumor or hematoma, there is usually an albuminosis of the spinal fluid. A man, however, in whom this condition occurs is also sufficiently gravely diseased to be kept away from the front.

The state of hyperalbuminosis without cytological increase contrasts with the increase of cells, even without relative increase in albumen, which occurs in sudden meningeal affections, or even as a result of intoxication of the meninges as in acute acidosis. The cells in this case are usually leucocytes; but in meningismal mumps it is lymphocytes which preponderate as is the case in luetic meningitis also. The condition is accounted for by the fact that diapedesis begins in the early stages of intoxication or inflammation of the choroid plexus before the membrane is sufficiently damaged to permit of transudation of serum. The phenomenon is, therefore, as a rule, quite evanescent, for albumen also becomes excessive in the fluid after one or two days.

The condition after commotion on the contrary, not being due to an intoxicative or inflammatory reaction of the secretory apparatus of the choroid plexus, is not accompanied by diapedesis, but is produced by a mechanical lesion of the membrane, which leads to an exudation of serum without cells, which enters the cerebro-spinal fluid, doing so by passive convection.

Hyperemotivity is particularly frequent in the milder cases of emotion. In some cases this may be purely psychogenetic reaction, the man's accident imbuing him with a terror of the future. But in some cases it is due to cerebral *sideration.* In this case it is nearly always accompanied by clearly perceptible vasomotor modifications in the head. The congestion aggravated by posture or excitement is seen conspicuously in the superficial palpebral and sclerotic veins. It is often conspicuous, too, in the temporal artery and the large veins of the neck. There is, often, a widening of the eyelids and a prominence of the eyeballs which remind one of the aspect in Graves' disease, especially when the patient shows a tachycardia, which is often the case. But other ocular signs of hyperthyroidism, fine tremor, hyperhydrosis, emaciation, the gastro-intestinal symptoms do not appear.

The symptoms which do occur may be attributed to damage of the sympathetic nerves in the head. They are even very persistent, lasting for years, and they occur in cases where hyperemotivity is not a conspicuous feature at all.

This persistence contrasts with the usually rapid disappearance of the hyperemotive syndrome in the patients in whom it has occurred merely as a result of excessive fatigue or o disease. In these men recovery usually occurs in the course of a few weeks, after which they are able to return to their corps. In these cases, the physician usually discerns the signs of malnutrition and exhaustion.

Finally, one has to consider the cases in whom a hyperemotivity has been fostered by the patient's own mental attitude. While these cases have been quite uncommon in the French service, they were very numerous in the British. The occurrence of such cases is dependent upon the general attitude of the medical corps towards the phenomena of pithiatism, and their power to distingush accurately between (1) the cases due to lesions, (2) the cases where a real hyperemotivity exists, (3) the cases where pithiatism is the predominant or sole feature.

The cure of such cases is very easily effected when proper methods are utilized. Still better, however, is the prevention of their occurrence, but this can be done only by a medical profession which has a clear grasp of the essentials and principles required for the treatment and its effective application.

The *differential diagnosis* of the syndrome of hyperemotivity and anxiety from that of cerebral commotion and that of pithiatism may be resumed in the following table:

Table II.

	Commotion (Concussion)	Hyperemotivity	Pithiatism
Onset	Immediate. Subjectively, headache.	Sometimes delayed.	Variable. Pseudoexaggeration.
Affectivity	Inertia or indifference with extreme ductility; later, restlessness.	Exaggerated. Resistance to suggestion or persuasion.	Extreme susceptibility to suggestion or persuasion.
Memory	Retrograde amnesia more or less complete.	No amnesia; but poor fixation.	Unaffected.
Sensibility	Dulled.	Exaggerated.	Unaffected.
Intellection	Much retarded and confused.	Untrustworthy.	Unaffected.
Physical signs	Unconsciousness; focal rare; cerebrospinal fluid; hypertension, hyperalbuminosis; slow or rapid pulse; slow or rapid breathing; pupillary changes; vomiting; incontinence; modification of reflexes; labyrinthine troubles.	Purely functional, such as: Tachycardia, vasomotor disturbances, endocrine disturbances, hyperthyroidism, hypermetabolism (or hypo), hyperadrenia, or hypoadrenia, pupillary dilatation, sweating.	None.
Recovery	Slow.	Slow usually.	Rapid under proper treatment.
Treatment	Rest, lumbar puncture.	Rest, endocrine, assurance or reëducation.	Psychotherapy. Reëducation.

This matter is more fully gone into in my forthcoming book, "Disorders of the Nervous System in Warfare" (Blakiston).

Prognosis. The gravity of a commotion may be inferred in the first place from the history of the duration of complete unconsciousness; but only by objective findings can one decide upon the real gravity of the condition.

The most important of these are those found in the cerebro-spinal fluid. In the grave cases, besides neurological signs and hyperemotivity, there is an exudation of serum and occasionally lymphocytes, which may continue for months, and sometimes of blood. In cases less severe, there is only a hyperalbuminosis with perhaps a diminution of chloride and an increase of sugar. In still less severe cases, the only physical sign is the increased pressure of the cerebro-spinal fluid. In this latter, the prognosis is quite favorable, and the patient should be able to return to duty before many weeks, quite restored; whereas, when there is hyperalbuminosis, some months may be required, and in the severer cases, when there is more, especially when there is a considerable amount of lymphocytes present, a year or more may elapse before the patient is even free from discomfort, and his serviceability as a soldier is scarcely to be expected except in light auxiliary work.

Treatment. All observers have agreed that the best treatment consists of repeated withdrawals of cerebro-spinal fluid until the pressure becomes normal, along with prolonged rest and lacto-vegetarian regime. The most troublesome symptom after the first stages have passed is persistent and even very severe headache; sometimes there is a distinct slowing of thought for a considerable period, and there is always a loss of initiative and an absence of the sense of well-being. Dizziness and tinnitus are also frequent symptoms.

And in these cases usually there is a marked impairment of the vertiginous reaction to a galvanic current passed from ear to ear which should normally occur with a current of less than four or five milliamperes. In these cases a resistance may rise as high as 20 or 30. All of these are relieved by lumbar puncture.

CATAPHORETIC TREATMENT

A pad composed of sixteen layers of lint soaked in a two per cent. solution of salicylate of soda is applied to the forehead, care being taken that the pad is entirely wetted and that its centre coincides with the middle line of the forehead. Over the centre of the pad is placed a metal plate, and the whole firmly bandaged to the head. The metal plate is connected to the negative pole of the battery. A pad of the same thickness, about ten by six inches in size, is soaked in the water, covered with a metal plate and bandaged to the lumbar region. It is necessary that it should be bandaged very firmly, as a loose bandage may lead to a variation of the surface of pad in contact with the skin, due to respiratory movements, causing the current to vary and any rapid variation of the current passing through the head is very unpleasant to the patient. The current should be increased very slowly, taking about twenty minutes to attain to the maximum of twenty milliamperes, at which strength it is allowed to pass for twenty minutes, and then is very slowly reduced to zero. When passing the galvanic current through the head the current must be reduced much more slowly than when passing it through the other parts of the body—the reduction from twenty milliamperes to zero should not be completed in less than ten minutes.

Selected Paper.

A NOTE ON THE HISTORY OF EPIDEMIC ENCEPHALOMYELITIS.

Based upon a Paper Read before the Royal Society of Medicine (Section of the History of Medicine) Jan., 1919.

By F. G. Crookshank, M.D., M.R.C.P., London,

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> "On l'a dit justement, les mêmes questions renaissent à chaque épidémie catarrhale, et leurs solutions diverses se reproduisent chaquefois à peu près les mêmes."
> Bouvier (*Ann. d'Hygiène Pub. et de Méd. Légale,* 1837).

The clinical manifestations which of late years have become associated with the names of encephalitis acuta hemorrhagica, polioencephalitis, poliomyelitis, and so forth, have, there is little doubt, prevailed from time to time, during many centuries, in epidemic form. The occurrences are not new; they have been described again and again in unmistakable language: but, since the overlying nosological, pathological, and etiological conceptions have been ever-varying, we have failed to recognize the historical continuity of the realities. The history of epidemic encephalomyelitis is, therefore, not that of "one disease," but of many; for what we call "diseases" are not natural objects, but conceptual.

We may indeed apply to encephalomyelitis in some degree the words employed by Michel Lévy, in the *Gazette Médicale de Paris,* for 1849, concerning cerebro-spinal meningitis:—

> ". . . point une nouveauté: confondue avec les fièvres cérébrales, ataxiques, nerveuses: perdue dans les énumérations banales et dans les généralités graphiques des épidémistes et des chroniqueurs de la médicine: mêlée à d'autres épidémies plus considérables, comme le typhus, et rattachée à ses manifestations, à titre d'anomalie ou de variété anatomique . . elle échappe à une détermination historique rigoreuse à cause de l'insuffisance ou de l'ambiguité des documents, de l'absence ou de l'imperfection de l'anatomie pathologique."

Nevertheless, though like Lévy, we may not wish "nous exposer à juger aujourd'hui sous l'optique d'une préoccupation synthétique," we must, as did he when observing the almost concurrent outbreaks of cerebro-spinal meningitis and influenza at the Val-de-Grâce, declare that "lorsqu'on voit . . . des combinaisons morbides qui déroutent l'observation vulgaire, l'idée de la continuité des épidémies se présente derrière le fait incontestable de leurs connexions."

This, however, is true: since the prevalences of encephalomyelitis have been irregular and intermittent, and the clinical pictures "protean," almost every epidemic has been hailed as a new disease by many, and described in new terms by someone. Nevertheless it is surprising that only one author, Ozanam, appears to have attempted the history of epidemic encephalitis, and that his work should have been ignored by those who have written the history of poliomyelitis, or the Heine-Medin disease, as well as by medical historians in general. The fact is that those who have written the history of diseases have persistently confused names, notions, and realities.

* * * * * *

Julien Le Paulmier, writing at Paris, in 1578 ("De morbis contagiosis"), observed that the epidemic pestilences due to heavenly influences, are, some grave, and some mitigated, while some are familiar and others unusual, or unaccustomed. And he gave three instances of unaccustomed pestilences, appearing suddenly, as if new diseases.

The first, said Le Paulmier, is the sydropyreton (or sudor Anglicus of 1529) "quæ nostro hoc seculo Britanniam mire efflixit": the second, "destillatio quædam popularis nostris vernaculi *Coqueluche** appellata quæ in nostram hanc Galliam anno 1551 primum suevire cooperta sit": and the third, "paraplegia inaudita sed lethalis quæ in Thaso contigit, flagrantes ardores gravedines anhelosæ aliique non pauci veterum oblivione deleti."

Of the first two, presently.

But what was this paraplegia in Thasus?

Hippocrates, in writing on epidemical diseases says that, in Thasus—I quote from Clifton's translation:—

> "During this state of the weather, in the winter, Paraplegias began and attacked many, some of whom dy'd in a short time, for the disease was very epidemical. In other respects they were well. But, in the very beginning of the Spring, Burning Fevers came on, and continued to the Equinox, and even to the Summer. Most of those escaped who were seiz'd presently after the beginning of the Spring and Summer, and some few dy'd: but when the Autumn and wet weather set in, they prov'd mortal to many. These fevers were of such a nature that where any one bled freely and plentifully at the nose he was sav'd by it more than by anything else."

The Hippocratic constitution of this year was, it is obvious, almost identical with that of 1918; epidemic paraplegia taking the place of our epidemic encephalitis "lethargica." The observation of Hippocrates was doubtless just; for the prevalences of encephalomyelitis have invariably stood in a certain relation to epidemics, and endemic-epidemics, of the "burning-fevers" that we call influenza.

I do not wish, however, to occupy time with citations from the ancients: it is more convenient to begin with the century of da Vinci and Buonarrotti—in what doctors think the dark ages, when, however, as Hallam suggests, "some parts of physical science had already attained a height which mere books do not record."

* * * * * *

In the last 450 years four periods seem to be indicated in respect of epidemic encephalomyelitis: four periods marked by different phases of medical thought and observation.

During the first, which closes with the era of Willis and Sydenham, wide epidemic prevalences were observed and compared, as a rule, without resolution into component "diseases"; and symptoms obviously due to forms of meningitis, encephalitis, and myelitis were described in relation to vast occurrences that we would now call "disease-groups."

In the second period, which roughly coincides with the eighteenth century, systems of nosology were based upon symptoms; and symptom-groups due to encephalitis and myelitis, as well as to meningitis, were referred to nervous, comatose, lethargic, stuporose, convulsive, apoplectic, and paralytic fevers, usually considered as different elements of special epidemic constitutions.

During the third period, which commenced about the year 1800, persistent efforts were made to distinguish specific diseases by the findings of morbid anatomy. Cerebritis, encephalitis, meningitis, and myelitis were then described, sometimes as "specific entities," sometimes as characteristic lesions of specific fevers such as "cerebral typhus" and the like;

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* The influenza which afflicted France during the time of the fifth and last "sweat" in England.

sometimes again as evidences of metastasis of disease from one part of the body to another.

The fourth period, which commenced some thirty years or more ago, is characterized by the distinction of many specific diseases by association with specific organisms. It is to be hoped that this period will prove one in which medicine will so far profit by biology as not to neglect synthetic research in the pursuit of purely analytical investigation.

There is, however, throughout the whole history of these 450 years one tendency in continuity that is manifested by the persistent ascription of certain odd, detached prevalences of encephalomyelitis to varieties of food poisoning.

The Germans in 1529 ascribed some of the maleficent forms of the sudor Anglicus to the eating of fish; and, in 1820, Justin Kerner, of Weinsberg, attributed outbreaks, clinically identical with polioencephalitis, to the eating of Swabian sausages; thereby laying the foundation of the myth of botulism. But it was also long the custom in Germany to incriminate ergot or rye as *the* cause of certain acute, epidemic, and generally febrile maladies, characterized by respiratory and gastro-intestinal catarrhs and exhibiting, as their cardinal symptoms, delirium or stupor, paralysis or convulsions and tremors, and interference with the special senses. These maladies frequently entailed permanent paralysis and withering of limbs, since they affected the young at least as frequently as (according to some authorities more frequently than) their elders.

This was the affection or group of affections known popularly in Germany as Kriebelkrankheit and otherwise: called Raphania in Sweden by Linnæus, since he thought it due to radish-seeds and not to ergot; and, during the last fifty years replaced in the minds and textbooks of Swedish physicians by cerebro-spinal meningitis, poliomyelitis and polio-encephalitis.

The unraveling of its tangled history is no easy task, yet it is lightened by detection of the mystification and suppression of facts practised by some writers whose works have attained renown at the expense of far greater French and Italian epidemiographers. It is in great part this belief in the existence of an *acute*, epidemic, protean, febrile, paralytic, and spasmodic, non-gangrenous form of ergotism that has so long confused the history of encephalomyelitis: and the mystery of its alleged restriction to Germany, Scandinavia and Russia entirely disappears when we find the same malady described in England, in France, in Spain, and in Italy, under different names. For it was not the disease so much as the etiological conception, that had a restricted area of distribution.

To revert, however, to the *first* of Julien Le Paulmier's unfamiliar pestilences, I will only remind you that, while we know very little of the clinical features of the English sweats, save that stupor was a prominent feature of the grave cases, Dr. Hamer has clearly shown the epidemiological features to be those of influenza. The myth that the sweats were, save for that of 1528-29, confined to Englishmen, may be considered now exploded, for each sweat in England corresponded very closely in time to an epidemic, in every European country, that can be demonstrated to have been either influenzal, or encephalitic, or both. It was the *name* that had so restricted an application; the nature of the coqueluche or trousse-galant in France, the Hauptkrankheit in Germany, and the mal mazzuco in Italy cannot be seriously disputed.

Nor is it difficult to place the strange disease that, according to Jean de Troyes and de Mézeray, spread through France in 1481-82. This epidemic, "qui attaquoit aussi bien les grands que les petits," "qui mettoit le feu à la teste." —this "maladie de fièvre et rage de teste," —if Zeviani's interpretation of an allusion by Allessandro Benedetto is well founded, was contemporaneous, not only with the epidemic encephalitis (Hecker) or Hauptkrankheit that afflicted Germany and is mentioned in the Frankfort Chronicles, but with a catarrhal and pleuritic epidemic in Italy. It was soon followed by the first "sweat" in England.

I do not propose now to deal at length with the English "sweats." It must suffice to say that a fresh examination of many early continental authors makes it abundantly clear that Dr. Hamer's contentions are just.

It is beyond reasonable doubt that the absurd legends which represent the "sweats" as a disease "sui generis" and, save in 1528-29, afflicting Englishmen only, would not have attained their present currency had the laborious but wrong-headed erudition of Gruner, Hecker, Haeser, and Hirsch been earlier called in question by some one as conversant with practical and historical epidemiology as Dr. Hamer, whose Milroy Lectures (1906) should be carefully read. The "sweats" *were* "influenzas" of malignant and nervous type in some years and places, but often ephemeral, and of the nature of the summer epidemic in 1918.

Since, however, the sweat of 1529 was so copiously described in Germany, it is worth recalling that, according to Schiller and others who gave contemporary accounts, the disease was of an extremely variable character, assuming different guises in different places; and it was of all grades of malignancy. It commenced with short shivers, and, in malignant cases, with convulsions; whilst dizziness and tinnitus were common. Formications, cramps, and weariness, muscular weaknesses, affections of the nerves, of the brain, pain in the head, and stupor ("somnolentia inevitabilisque sopor") were amongst the symptoms in some places of a malady which struck all classes of society and carried off some victims in even a few hours. The breathing was "as if the lungs were seized with incipient paralysis," whilst later "the spinal marrow was affected."

> "Contra, quibus sudor non satis fluxit aut repulsus fuit, mortui sunt, vel asphyxia vel tabe et decidentia membrorum vel paralysi et obnigratione manuum atque pedum."

In those who escaped with their life, paralytic consequences of various kinds were noted.

The very clear indications in Schiller's tract, that epidemic encephalomyelitis prevailed in Germany during the "English sweat" of 1529 in that country, have by most authors been either slurred over or treated as evidence of "ergotism," much in the same way as some Patagonian historian, in years to come, may write of the prevalence of "botulism" in England during the "Spanish" influenza of 1918.

And it is interesting to note that, although Gruner, Hecker, Haeser, and Hirsch all declared France to have been spared the "sweat" in 1529, there is nevertheless the clearest evidence, in Paradin's "Histoire de Nostre Tems," of a malignant and neurotoxic influenza—"une nouvelle maladies et inconnue aux médecins"—which ravaged France in that year.

> "A cette nouvelle maladie fut nouveau nom imposé, et fut nommé *Trousse galand* pour la contagieuse mort qui s'en ensuivoit, avec grande et impourvue soudeinneté."

"Stop-gallant," be it noted, was the name given to our later "sweats" in England.

It is perhaps true that it was only during times of epidemic, and not always then, that the relation of the "nervous" cases and case-groups to the sudoral and catarrhal cases and case-groups was recognized; but Benedetto, when writing "de destillatibus sive catarrhis" (*Omnium a vertice ad calcem morborum signa*), showed that he, at any rate, connected the signs and consequences of what we now call polio-encephalitis and poliomyelitis with the oftentimes epidemic catarrh. Fernel, moreover, who had written of new diseases in much the same strain as Le Paulmier (De abdit. rerum causis: lib. ii, cap. xi) had come to much the same conclusion.

I can only mention in passing, and without comment, the stuporose epidemic in Piedmont and Savoy during 1545-46, described by Sanders and by Ambroise Paré. It, too, like the 1529 affair, was called Thoussegalant, and it was moreover contemporaneous with a "Hauptweh" in Germany (1543-44-45-46) and a camp-disease at Boulogne.

"Trailers," in Leichtenstern's terminology, straggled on during the fifties, and even later, whilst the great pandemic influenza of 1580 had an *avant-coureur* in 1576, described by Ballonius, the French Sydenham. In Yvaren's translation we read thus: "Durant tout l'hiver et au commencement du printemps, il y eut une quantité innombrable de paralysis, et elles ne dépendaient pas seulement d'une fluxion froide partie de la tête . . . on rapportait celle-ci à l'état du ciel."

And Ballonius observes: "Les affections catarrhales se portent-elles à l'extérieur, ou de la tête au organes sous-jacents, on voit maître des paraplégies et des hémiplégies."

The great influenza of 1580 was, in some places, so sudoral that many declared it the English sweat come back again, an so cephalic that Brunner called it, too, the Hauptkrankheit. Sennert himself said of it:—

> "Nonnullis infestavit perpetua in somnia propensio ut in peste fieri solet."

By pestis he meant, of course, the Pestis Britannica of 1529.

The next year (1581), however, was marked at Lüneburg, in North Germany, by an epidemic of palsies in the head and limbs, described by Ronsseus, that, like an outbreak in Belgium during the "influenzas" of 1557-58, has found a place in the later chronologies of "convulsive ergotism." Of this notable epidemic an admirable account is given by Schenkius, copied almost verbatim from Ronsseus, in which are used the very adjectives "novus," and "inauditus," employed by Reusner for the same disease when it reappeared fifteen years later. Schenkius said that it was difficult to determine whether the malady was epidemic or endemic: and made no suggestion whatsoever of ergotism. The illness began with spasticity and palsy of the hands and feet: the patients, sometimes delirious, were often slumberous. The half-closed eyes and open mouth filled with ropy mucus, and the tongue, affected as if paralyzed, all remind us of the descriptions of the botulists: but the statement that sometimes those who recovered found the hands and feet to have lost their office as if the limbs were luxated, makes it clear that flaccid palsies were no unusual sequelae.

Comparison of this account with one of the "spasmodic" form of Heine-Medin disease in Australia by Breinl in 1917, forms one of the most instructive parallels in medicine. The coincidence extends even to the occurrence, in both groups of cases, of severe gastro-intestinal disturbances, as in some of ours during 1918.

In the last decade of the sixteenth century scattered prevalences now recognized as influenzal were freely interspersed by great trailing epidemics very similar to this at Lüneburg, but generally known popularly as Kriebelkrankheit, or Krampfsucht. It is clear from the accounts of both Sennert and Horst that no symptom or sign of polio-encephalitis, poliomyelitis, or cerebro-spinal meningitis was lacking; and Sennert is emphatic that while "nunc cum febre, nunc sine febre," "neque contagio hoc malum carebat."

Neither Horst nor Sennert paid attention to the vulgar etiology of ergot, chick-peas, bad bread, sour apples, mushrooms and the like. They regarded the malady as a "malignant fever with spasms." And, in 1772, Schleger, in a delightful but rhetorical essay, exposed clearly the repeated statement of Baldinger and others that this epidemic had been shown to be ergotic by those who, at the time, described it.

It is worth recalling, too, that Reusner of Frankfort, when writing of the scurvy in 1600, spoke of the Kriebelkrankheit as characterized, when it appeared in 1595, by "veternus, mania, lumbago, paralysis, convulsiones, et morbus, Herculeus," and declared that: "ob symptomatum insolentiam novum esse suspicatum fuit."

Now, in 1597, whilst this malady was raging, or trailing in Germany, a like epidemic appeared in Italy as already in 1529—the year of the sudor Anglicus—and earlier under the name of the mal mazzuco. Zeviani, in 1804, brought forward evidence in favor of the view that this mal mazzuco was an intensely "nervous" form of influenza, and showed clearly that stupor, and katatonia ("morbus attonitus"), were prominent amongst its symptoms.

To reinforce the point that "epidemic catarrh" was widespread in 1597, he cited Schenkius who, writing contemporaneously, appears to have identified the Italian catarrhal epidemic in 1597 with one which invaded Germany "ipso tempore." Zeviani, whose monograph on the epidemic catarrh is one of the best accounts of influenza ever written, identified realities, and refused to be a slave to names and notions.

A few more words are necessary on this question of the mal mazzuco. Zeviani cites, from Brassavola (*Index in Galen*), a passage which, though doubtless authentic, I have failed to find in those prodigious folios. It runs thus: "Pulsus affectus ex phrenitide et lethargo quem nos vocamus malum Mazuchi." Pretty clearly then, the mal mazzuco was a "clinical entity." It had occurred in Sicily, and elsewhere, about 1504-5, at the same time as "encephalitis" in Germany, and shortly before our second "sweat" in England. It was notoriously present in Italy during 1529, when, according to the Teutonic epidemiographers, that peninsula escaped the "sweat," and it recurred at intervals until 1597.

Zeviani was right: the mal mazzuco was an epidemic nervous "disease," closely allied to influenza, of which he considered it a form, or derivative. The clinical picture was variable: whilst occasionally "meningeal," sometimes convulsions, and at others stupor, lethargy, and catalepsy were characteristic symptoms.

It was compared vulgarly, at times, to the cysticercus disease of the sheep, and hence became known as "morbus ovinus," and "morbus arietis." The contemporary name in Germany for influenza was "Schaffkrankheit";

an appellation which, by a happy confusion, was in 1712 given by Camerarius as “Schlafkrankheit.”

There is, after 1600, a long, almost silent, period in the history both of influenza and of all forms of encephalomyelitis. But the famous prevalences of 1657-58 (described in England by Willis, and marked in the autumn of the latter year by a strange fever “whereby men were grievously affected in their brains and nervous stocks,”), were signalized at Copenhagen, in 1657, by an epidemic of lethargy, or lethargic encephalitis, that makes the constitution for that year an even juster parallel with that of 1918 than was that of Hippocrates already mentioned.

I do not think that Bartholin's account has been referred to for a hundred years, and therefore cite it, almost in full:—

> “Hyems frigida quidem, sed sine multa nive, in urbe nostra affectus soporosos excitavit, accuratis periodis molestos. Non pauci nostra cura soporem perpetuum evasere. A meridie sopor mensis spacio obrepabat, et ab astantibus excitati in somnum relabebantur. Expurgato capite et exsiccato, imprimis cucurbitulis dorso affixis convaluerunt. Vere ejusdem anni Pleuritides Epidemiæ grassabantur, cum febre acuta doloribus pungivitis. . . . . Declinante veró æstate, febres ephemeræ invaluerunt, spacio 24 horarum desinentes, invadentesque cum vomitu, calore intenso perdurante. . . . .
>
> “Ecstasi quadem correpti de capitis, doloribus conquerebantur. Nonnullis morbilli sociabantur, aliquibus petechiæ.”
>
> (*Hist. Anat. et Med. Rar.*, cent v. hist. vi.)

Four years later, in 1661, there occurred in England the famous fever “chiefly infestous to the brain and nervous stock,” described by Willis,* identified by him with the German Kriebelkrankheit of 1595-96-97, and recognized by Saillant, in 1776, in a wonderfully lucid paper, as the convulsive epidemic malady wrongly attributed by some to ergotism, and confounded with the gangrenous ergotism of Sologne.

This famous “feavour” of Willis, and the “comatose fever” described by Sydenham, were shown by Dr. Charles Creighton, thirty years ago, to stand for a definite form of illness that, when Dr. Creighton wrote, was not recognized by nosographers.

And Saillant, in his paper, which has somehow escaped the German bibliographers, makes it clear that, though called by him the Morbus Convulsivus Epidemicus, this malady was as protean as only epidemic encephalomyelitis influenza can be, and that in different years, and in different places, different clinical types occurred.

The riddle is now solved. Wolfe's fever represented a convulsive, and Sydenham's a lethargic form of encephalomyelitis occurring epidemically. The details of the argument were given by me in the Chadwick Lectures (1918), as yet unpublished; but it may here be said that Willis's fever was exactly reproduced in Queensland during 1917 (Breinl), where even the flexor spasms, so long and so erroneously held to be characteristic as “ergotism,” were observed, as was sometimes the case in London, during 1918, amongst our cases of “encephalitis lethargica.”

The European influenzas of 1674-75 were preceded or accompanied by “epidemic psychoses” in Sweden (1673), the Kriebelkrankheit again in Germany (1672-75), malignant fevers with spasms in France (1673), and the comatose fever of Sydenham in 1673-74-75.

Henceforward, until 1800, the history of epidemic encephalomyelitis is that of Kriebelkrankheit (or Raphania, as it came to be called) in Germany, Scandinavia and Russia; of nervous fevers in Britain; of epidemic apoplexics and paralyses in Italy; and of nervous, comatose, lethargic, apoplectic, paralytic, spasmodic and convulsive fevers, as well as spontaneous “hydrophobias,” described by Werlhof, Saalmann, de Sauvages, Selle, Vogel, Andry, Hillary, Wintringham, Gilchrist, Grant, and many other epidemiologists and systematists. Much material has been collected: much more perhaps remains for investigation. But one or two landmarks may be pointed out. For example: Albrecht of Hildesheim, in 1695, described a probable case of “encephalitis lethargica” in these words:—

> “De febre Lethargica in Strabismum utriusque oculi desinente.”
>
> “Anno 1695, virgo hujus loci, viginti circiter annorum, honesti cujus tam civis I.F. filia in febrem incidit continuam, acutissima cephalalgia siccitate oris et aliis, quæ in ejusmodi morbis acutis notari sunt, symptomatibus stipatam, quorum, tamen praecipuum circa, hoc subjectum in summa ad somnum propensione consistebat, quæ quo magis capitis remit-

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* Pepys, in his diary, mentions the “spotted fever,” and also “strange and fatal fevers” as prevalent to an alarming extent in 1661.

> tebat dolor, majus majusque capiebat incrementum, ita, ut quoties a somno excitaretur toties in eundem relaberetur profundissimum. . . .
>
> "Scilicet, a quo tempora meliori prædita erat valetudine, oculorum talis advertebatur distortio, quæ pupillam in utroque versus palpebram adigebat superiorem, inferiori bulbi parte ultra ejus dimidium non nisi album referente." . . . . . . (*Miscell. Curios.*, an. ix, x, obs. i.)

Later, the famous influenza of 1712, so notoriously cephalic and nervous, was signalized at Tübingen by the epidemic, of which so much has been said lately, usually referred to as the "Schlafkrankheit." It is not generally stated that R. J. Kammermeister, or Camerarius, who described it, called it an epidemic febrile catarrh, and identified it with the pandemic of 1580, of which I have spoken. I cite some salient passages in his account:—

> "Hæc autem pleraque omnia quadrabant iterum in febrem catarrhalem hujus anni 1712. Fuit hæc universalis, popularis maxima gravis capiti, sub concursu forte trium, febris. catarrhi, vomitus, magis afflicto; sive contagiosæ vel epidemiæ predicatum meruisse dicenda sit. . . . . Gravedo ista quondam Germanis *'die Schlafkrankheit'* dicta fuit, nunc agrypnia, nunc veterno molestior. Hac vice nomen illud non audii. Nec dormivisse multum nemini, præterquam paucos, opiatis quidem non usos. Noctes utique graves, turbatæ phantasiis frequens etiam per diem querela de afflictis oculis, utut non inflammatis, ægre tamen aperiendis, nec lucem ferentibus. . . . . Eadem Gallis olim audiit 'Coqueluche.'" (*Ephemerides*, cent. iii and iv, t. xxvii, obs. lviii.)

It is on this account that von Economo relies, when suggesting that encephalitis lethargica was recognized, as a "clinical entity," by Camerarius and by precedent observers. Whatever we may think as to the identity of the cases seen by Camerarius with those seen at Vienna during 1917 (and Professor Netter is inclined to be critical, though accepting Albrecht's case), there can be no doubt that influenza prevailed at Tübingen during 1712, and was accompanied by encephalitic manifestations.

I have failed, however, to find any evidence that the name "Schlafkrankheit" had previously obtained currency, and am inclined to believe, as already stated, that there had been a perversion, not without significance, from the earlier nicknames of "Schafkrankheit" and "Schaffhusten." There may even have been a printer's error!

Much more important, however, than Camerarius's short essay is the account given by Guidetti (in Bianchi's *Historia Hepatica,* 1725, p. 718) of the epidemic constitution for 1712 as observed at Turin. The parallel with that of 1918 at London is extraordinary: clearly, "epidemic stupor" is no "new disease."

Some passages may be given from Guidetti:—

> "Ad Januarii principium nebulae adhuc contumaces in tenuem pluviam liquescebant et statim inter morbos catarrhales varios puta tusses raucedines et ptyalismos irrepsere febres frequenter soporosae, provectis aeque ac juvenibus infensae cum frigido ad caput decubitur, quem febris quidam imminuta prosequabatur. *Aegri interim lente moriebantar vel comatosi vel cataleptici vel aphoni. Plurimi ante obitum convulsionibus torquebantur.*"

It is moreover interesting to note that Heusinger, in his *Commentatio Semiologica,* actually connoted Guidetti's account with that of Willis, and that, according to Guidetti, the "rheumatic epidemic," for so he termed the influenza of 1712, spread, in the late autumn, "inequaliter sed celeriter, per totam Italiam."

In the latter part of 1727, Scheffelius published a now somewhat rare essay, entitled, "De Morbo Epidemio Convulsivo, per Holsatiam grassante oppido raro." The malady, evidently the same as that which occurred at Tübingen in 1729, had been observed by Scheffelius in the spring and summer of 1727. Identified by not a few as the old Kriebelkrankheit, it was claimed by others as certainly due to ergotism, though Scheffelius declared many to have been affected who had not eaten questionable bread. The nature of Scheffelius's powerful argument may be inferred from some of his rubrics:—

> "An morbus novus sit?"
>
> "Epidemiei paucissimi sunt novi: exemplo febris catarrhalis 1712."
>
> "Et morbi nostri convulsivi, teste Willisio et aliis," "Horstius eundem morbum descripsit."
>
> "Natura ipsa non est causa."
>
> "Morbum hunc a panis vitio apud nos productum esse non est verosimile sed ex aeris peculiari quadam constitutione."
>
> "Verum istud contagium non est absolutum."

The identification with Willis's fever is remarkable enough, but it is even more noteworthy that Scheffelius found traces of the "same disease" as this of 1727, in some particular accounts of the influenza of 1580, and that his insight was vindicated by the recurrent waves of influenza that continued from 1729 to 1733 throughout the world.

This famous influenza of 1729-33, singularly enough, was, like that of 1712, marked at Tübingen by an undoubted encephalomyelitis, though this time of convulsive type. *Elias* Camerarius, who described it (*Act. Phys. Med.*, ii, obs. cli) clearly recognized the essential unity of the nervous disease and the catarrhal cases. This again seems to have baffled the writers on ergotism, for they have left the account of Camerarius on one side. The common people, as always, he said, accused the weather, the grains, the bread, and the unripe fruits. But he himself thought these but vague conjectures, and expressed no opinion of his own.

A few years later, Kriebelkrankheit, both convulsive and paralytic, was in Brandenburg (1741) the forerunner of influenza in Germany (1742), and the pandemic of 1743; while, in 1745, the same or a similar meningeal, encephalitic and myelitic malady trailed through Sweden, giving rise again to vague conjectures, but being, on the whole, identified clinically with its German congener.

Sequential paralyses were noted: the acute cases were stuporose, mute, and had ocular disturbances.

1754-55-56 and 1757 saw a recurrence in Sweden, again with stupors, delirium, psychoses and mutism, but with convulsions rather than paralyses. This terminated, in 1758, in a peculiar kind of "influenza" (Ozanam).

Boström indeed, at Upsala, had, in 1757, triumphantly identified the endemic-epidemic of these years (known as the Upsala fever, and marked by head-retraction) with a "long known protean fever, everywhere prevalent from time to time, sometimes in one form, sometimes in another." "Hic morbus non est novus," he declared. Nevertheless, the trailing epidemics in the rural districts had again been identified on clinical grounds with the Kriebelkrankheit, though shown clearly *not* to be due to ergot. This being so, Rothman, a pupil of Linné, and with that great man's approbation, elaborated the hypothesis that the stuporose, delirious, paralytic and convulsant "fever," possibly contagious, was caused by radish seeds in the threshed grain.[*] It was therefore christened Raphania: and the disease was known as such for nearly a hundred years. Meanwhile the first case of botulism (or encephalitis due to sausage poisoning) is said, by Kerner, to have been described in Germany in 1755, while Raphania, as we must now call it, occurred there at the same time.

The influenzas of 1762 were catarrhal rather than nervous; but Raphania was again severe in Brandenburg and Zell in 1770, and was held by Selle, amongst other German physicians, to be feebly contagious, a fever, and different, by all the heavens, from true ergotism: 1771 saw a genuine and severe influenza in Hesse, and 1772 influenza and epidemic convulsions in North America. About this time, too, Leidenfrost and Schleger protested vigorously against the notion, again gaining ground, that the acute, paralytic, and spasmodic malady had something to do with the gangrenous, and the chronic forms of ergotism, but in vain; though Haberkorn, earlier, properly had defined it as "die Nervenkrankheit."

However, 1773 was the year of Sir Walter Scott's infantile paralysis and, in 1772-73-74, the so-called miliary fever prevailed extensively in France, accompanied by nervous manifestations such as coma and convulsions (Baraillon). In 1775 Andry described admirably what must have been acute bulbar encephalitis in a young woman—he called it "hydrophobia without the bite of a dog"—and, in London, Grant declared that, during the influenza of that year he had lost several patients with the "Comatose Fever" of Sydenham.

During the influenza years 1780-81-82, Butter, under the name of "infantile remittent fever," observed what was clearly the *acute* stage of encephalomyelitis,[†] describing it as a complaint both epidemic and sporadic, and affecting adults as well as children, while, two years later (1784) Michael Underwood noted, as "debility of the lower extremities," the deformities resulting from what must have been the same acute illness.

A celebrated institutional outbreak at Turin, in 1789, has been handed down by copyists as

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[*] It was noticed, or declared, that domestic fowls were at the time affected by what is now called "limber neck." Similar occurrences have been noticed of late years by those who have investigated influenza and poliomyelitis, and by those who believe in botulism (*cf.* Dickson: Botulism, p. 106).

[†] Butter's "infantile remittent fever" was, with rare insight, identified 30 years ago by Dr. Charles Creighton, with Willis' convulsive fever (1661) and Sydenham's "comatose fever" (1673-4-5) *vide supra.*

Raphania; but the accounts given by Corradi indicate clearly, I think, either an encephalitis or a cerebro-spinal meningitis; moreover, influenza was raging in the city at the time.

The third chapter of my story may perhaps be taken to commence in 1800, when Chardel, of Paris, described cerebral fever, or primary inflammation of the brain, as a definite entity: 1799 and 1800 was an influenza season. The world-wide influenza prevalences of 1800-03 were noted in Russia as extraordinarily "cerebral"; and Raphania was recorded there (as again in Scandinavia) in 1804.

The Italian influenza of these years was also very "cerebral," and it was his experiences then, apparently, which led Zeviani to consider the old "mal mazzuco" as "influenzal," or, rather, derived from the "epidemic catarrh." The celebrated "cerebro-spinal meningitis" at Geneva was in 1805; that of Massachusetts in 1806.

A very interesting point now arises. Influenza had prevailed extensively in Hindostan about 1800-03, and John Shaw, of London, writing of deformities in 1823, described the case of a young man whose disability dated from an attack of paralysis, evidently poliomyelitic, that he suffered during his infancy in India. Shaw went on to say that he had been told that such "sudden attacks" were common among children in India.

Dr. Ager, of Brooklyn, in a recent paper, lays it down, on the strength of this suggestive remark, that infantile paralysis prevailed to some extent amongst Anglo-Indian children in 1800, and hints that it is really an Asian malady. The coincident appearance of epidemic influenza in India, about the year 1800, does not appear to have struck him as noteworthy. Feiler, writing from Salzburg in 1814, described a case of "Shank-shrinking," as he called it, in a girl aged 12 or 13, afflicted since infancy. She, too, must have suffered about 1802, the year of the so-called sweating-sickness at Röttingen, which was identified, in the midst of influenza, as the mediaeval sweating sickness come back again (Hecker).

Influenza in Europe occurred only in the endemic-epidemic form, though severely, between 1819 and 1824; and many outbreaks were in France and Germany described as miliary fever, or "sweating-sicknesses." It was during these years that Kerner, in Würtemberg, first described the "Sausage Disease," afterwards known as botulism, and that Abercrombie in Britain and Hutin and others in France and Germany, gave so much attention to encephalitis.

Epidemic influenza was severe in the United States in 1824-25-26: indeed, in 1824 Raphania was diagnosed clinically in a certain prison in New England, while, in 1826, Jones declared he had noted the severity of "phrenitis" as well as other nervous affections in the "late influenzas."

The influenzas in Europe, of 1831, 1833, and 1836-37, gave rise to a perfect exuberance of literature concerning encephalitis and myelitis in France, while, from Germany, we heard again of Raphania, by now being examined critically.

In Würtemberg, botulism and acute encephalitis were described within a few miles of each other, in 1834 and 1835. In the same years and in the same kingdom Heine noted his first cases of infantile paralysis, while 1835 saw Badham's cases of the same malady in England, and the publication of lectures by Ryan, a long forgotten London physician, describing, *inter alia,* cerebral, bulbar, and spinal forms of encephalomyelitis in children.

The medical history of these years is indeed remarkable. Lombard, writing from Geneva to the *Gazette Médicale de Paris* (1831 and 1837) drew attention to an unpublished paper by Peschier (1820) describing the cerebral and nervous forms of the influenzas of that period during which Kerner ascribed to "sausage poisoning" certain similar "clinical entities" that Stoker afterwards declared that he had seen the same year at Dublin.

But Lombard expressed an aphorism that is worth recording, since it embodies the experience of Hippocrates, of Ballonius, of Bartholin, of the two Kammermeisters, and of Guidetti, when he said:—

"La grippe est souvent *précédée* par une constitution éminemment nerveuse, dont les caractères principes sont de porter le trouble dans les fonctions du cerveau et des nerfs encéphaliques." Ducros, Montain, Pétrequin, and Récamier made clinical observations in the same sense, and Gintrac, of Bordeaux, in a paper that I have not seen, described "epidemic stupor in children"— "coma sans danger"—as prevailing in the early spring of that notable influenza year, 1837. Malcorps, of

Brussels, went further. He divided the historic influenzas into two categories: one, vernal, catarrhal, and benign, as in 1658, 1742, 1743, 1762, and 1780; the other, autumnal, or hiemal, and marked by "prodromes nerveux, caractère adynamique, gravité plus grande," as in 1580, 1676, 1730, 1737, 1775, and 1837. Surely our "encephalitis lethargica" of 1918 should be reckoned amongst the "prodromes nerveux" of the influenza of 1918, which, in point of fact, *combined* Malcorps's two categories.

The influenzas of 1841-45 were evidently accompanied by much infantile paralysis in the British Isles, described by West, Kennedy, and MacCormac; much encephalitis, cerebro-spinal meningitis and "cerebral typhus" in France; encephalitis, botulism and more infantile paralysis in Germany; and, in Italy, the extraordinary "Tifo apoplettico-paralytico-tetanico," which, though now thought to have been cerebro-spinal meningitis, was, at the time, identified clinically (1) as the sweating sickness of the Middle Ages (Agostinacchio), (2) Raphania (Semmola), and (3) encephalitis and influenza.

In Scandinavia and Russia, Raphania and epidemic psychoses prevailed throughout these years, while the influenzas in the United States during 1842-43 had been preceded by the outbreak of infantile paralysis described by Colmer in 1841; and Dunglinson had noted the great increase of encephalitis everywhere at home and abroad.

The great influenza pandemic of 1847 was mainly catarrhal, but the lesser waves of 1850-51, 1855, and 1857 were very "nervous."

In Würtemberg, in 1850-51, there were again outbreaks of botulism and encephalitis; and the famous epidemic of Calw, glorified in Fritz's essay as one of the spinal and bulbar forms of typhoid, was either Heine-Medin disease or nothing.

Raphania was flickering out in Sweden in the "fifties," for it then and there was beginning to be called cerebro-spinal meningitis; but at the same time south-western Germany and Bavaria, with Hesse-Nassau, again suffered an extraordinary medley of outbreaks of botulism, Raphania, localized influenzas, encephalitis and the like diagnostic "entities." In 1856, Heusinger, of Marburg, studied the question of acute and chronic ergotism in the light of actual experience and came to the conclusion that some of the old epidemics had been probably typhus—*i.e.*, "cerebral typhus," or cerebro-spinal meningitis and encephalitis.

Influenza came back, not as a great pandemic, but diffusedly, in 1866-67. There had been some infantile paralysis at Paris just before: but botulism and Raphania again appeared in Würtemberg and adjacent districts in these years, during which Stuttgart suffered severely from influenza, while the last trace of Raphania and epidemic psychopathy in Sweden (1868) coincided with the first recognized outbreak of poliomyelitis in Norway (Ruhräh).

Poliomyelitis was epidemic on quite a large scale in Philadelphia, in 1871-72-73-74: influenza was "universal" in the States in 1873, and continued diffused therein until 1875, reaching France in 1874-75; and the first recorded *epidemic* of poliomyelitis in the latter country was in 1875.

1880-81 is a year now generally recognized as one of scattered influenzal prevalences—it was then that Wernicke and Etter described their cases of polio-encephalitis.

Poliomyelitis was then epidemic in Sweden and noticeable in England also, while in 1884 Strümpell enunciated his now well-known views on the essential identity of polio-encephalitis and poliomyelitis.

The pandemic influenza of 1889-90 was *preceded* by Swedish outbreaks of "infantile paralysis," studied by Medin, and by the scattered diffusion in the Mediterranean basin of a "new disease," afterwards decided to be cerebro-spinal meningitis (Bezly Thorne). It was *followed* by the famous "Nona" of Lombardy and Hungary: identified by Netter with the "encephalitis lethargica" of last year and this: the newest of new diseases! Yet surely it was none other than the old mal mazzuco!

We reaped an aftermath of the great 1889-90 pandemic in minor waves of influenza, accompanied by encephalitis throughout the world, till 1895. In 1895 there was not only the Stockholm poliomyelitis, but, very curiously, an epidemic of "grippe" and acute encephalomyelitis at Toulouse, studied by André, who described it in his book on influenza, declaring that polio-encephalitis had proved to be a contagious malady, and suggesting that it represents a local and intense form of "grippe nerveuse."

About this time, too, Oppenheim and Cassirer had rediscovered Wernicke's "encephalitis acuta hæmorrhagica" and had shown it to be, in the main, influenzal.

Moreover, it was also in 1895 that van Ermengem observed the Belgian outbreak which, while clinically polio-encephalitis, was declared to be the old Swabian "botulism," and ascribed to an organism which has been found twice only (if ever) in the body of anyone dying of this alleged "disease." This bacterial botulism of van Ermengem cannot well be distinguished *clinically* from the older sausage disease of Justin Kerner, and it is also clinically identical with certain forms at least of mal mazzuco and Raphania.

The convulsive forms of the mal mazzuco and of Raphania, on the other hand, seem indistinguishable from the convulsive, or spasmodic forms of Heine-Medin disease described by German and Austrian observers a few years ago, and from the "mysterious disease" epidemic in Australia during the spring of 1917.

The events of the last twenty-five or thirty years have hardly yet obtained the dignity of history. Nevertheless, without doubt, culminating as they do in the recent world-cycle of poliomyelitis, polio-encephalitis, cerebro-spinal meningitis and influenza, they amply vindicate the view as to the *epidemiological* relation at least between these various diseases, expressed for poliomyelitis by Boström in 1910, and for cerebro-spinal meningitis by Dr. Hamer, on many occasions.

The relationship between these "diseases," and some others as well, to those who have examined the evidence, is not superficial and based upon any confusion. Any confusion that there may be has arisen by reason of well-meaning attempts to establish an artificial, even if convenient, set of distinctions as something which corresponds to realities in nature.

In this connection reference should be made to the important paper by Looft, which may be found in the *Nord. Medic. Arkiv* for 1901, (afd. ii, Häft i). Looft, while professedly giving the history of cerebro-spinal meningitis in Norway between 1875 and 1897, throws into high relief the extraordinary clinical and epidemiological relationship between polio-encephalitis, poliomyelitis, cerebro-spinal meningitis, and epidemic catarrh. For, without doubt, many of the cases ascribed by him to the third of these diseases, and shown to be connected with the fourth would have been attributed more justly to either the first or the second: a point that has been suggested also by Foster and Gaskell.

In the recent Chadwick lectures I dealt at greater length than is now possible with the history of all these affections: and I then tried to show, as to-day, that their epidemiological association (if we have regard to realities and not to names, or to concepts) has been repeatedly recognized since the time of Hippocrates.

This association, recognized by Boström in 1757 and by Zeviani in 1804, undoubtedly will be discovered again in the near future.

Independent observers, such as Lewis in America (*Interstate Medical Journal,* 1918, v, p. 396) and Saunders of Grahamstown, are everywhere now contributing their quota, and formulating their conclusions, in support of the synthetic tendency. The recent experiences of Marcus at Stockholm (*Berliner klinische Wochenschrift,* 1918, lv, pp. 1151-2) and the observations of Sainton, and of Chartier (*Presse Médicale,* 1918) should not pass unheeded.

In the meantime the position may perhaps be thus summarized:—

(1) Clinical occurrences of the nature that we now ascribe to encephalomyelitis, or encephalo-myelo-meningitis, have been recorded in modern times for at least 450 years.

(2) In great part these occurrences have been noted as incidental to major prevalences, known historically as the sweating sicknesses, the epidemic catarrhs, or influenzas and the like.

(3) Special prevalences of these occurrences have also been described as manifestations of special diseases. These special prevalences have usually appeared shortly before or shortly after major "influenzal" epidemics, or else in geographical proximity to endemic-epidemic and endemic influenzal prevalences.

(4) Epidemic encephalo-myelo-meningitis represents an intensive and specialized reaction that has the same epidemiological relation to pandemic influenza as have the prevalences and epidemics of "septic" pneumonia,

of gastro-intestinal illness, and of other maladies described as occurring before and after the wide diffusions generally referred to as pandemic influenza.

(5) Owing to the relative infrequency of epidemic encephalomyelitis and its marked variation in type, historical investigation is necessary in order that contemporary occurrences be viewed in a correct perspective.

One detail deserves mention, here and now, for it shows the difficulty of historical investigation at short range.

The great epidemic of poliomyelitis in and about New York during 1916 followed closely upon a prevalence of "grip" in the States, the like of which has not been known since 1889-90. Yet this wave which "swept through" a continent has completely eluded the attention of those who have written the "history" of our recent influenza! It was well described, however, by Capps and Moody, as well as by others, in the *Journal of the American Medical Association* for 1916.

Once more, there is nothing new in the notions here put forward. Many writers, perhaps most notably Dr. Hamer in our time, have recognized the clinical affinities and epidemiological liaison between what we now recognize as epidemic forms of encephalomyelitis and meningitis, on the one hand, and the epidemic catarrhal fever, or influenza, on the other.

* * * * * *

Hic morbus non est Novus: and we must pardon Polydore Vergil who, as was declared by the scholar met with on the way to Montesino's cave, forgot to tell us who was the first in the world to be troubled with a catarrh. And I think I know why Sydenham commended to doctors the study of Don Quixote!

BIBLIOGRAPHY.

An introduction to the literature is afforded by the bibliographies in some of the following treatises and papers:—

BIBLIOGRAPHY.

Breinl: Med. Journ. of Austral., 1918, i, pp. 209, 234.
Brochin: Dictionnaire Encyclopédique des Sciences Médicales, 1873-4, articles: "Catarrhe" and "Grippe."
Collins and Finkler: "Twentieth Century Practice of Medicine," x, xv, 1897, 1898, articles "Encephalitis" and "Influenza."
Corradi: "Annali delle Epidemie occorse in Italia," Bologna, 1857-1895.
Creighton: "A History of Epidemics in Great Britain."
Crookshank: Lancet, 1918 (i and ii) and 1919 (i and ii); Proc. Roy. Soc. Med., 1918, xii (Sects. Med., Path., Epid.), pp. iv, xii, xiv, xxi.
Gruner: "Scriptores de Sudore Anglico superstites," 1847.
Haesner: "Bibliotheca Epidemiographica," 1862.
Hamer: Reports of the Medical Officer of the London County Council (1917), 1918, 8 (1918) 1919.
Hecker: "The Epidemics of the Middle Ages," 1864.
Hirsch: "Geographical and Historical Pathology" (English translation, 1883-1886).
Nothnagel's "Encyclopædia of Practical Medicine," article "Influenza," (?) 1905.
Oppenheim: "Text-book of Nervous Diseases," and (with Cassirer) article: "Encephalitis," in Nothnagel's "Handbuch."
Ozanam: "Histoire médicale générale et particulaire des maladies épidémiques, etc.," 1835.
Rubräh and Mayer: 'Poliomyelitis in All Its Aspects," 1917.
Saillant: "Recherches sur la maladie convulsive épidémique, attribuée," etc., Hist. et mém. de la Soc. Roy. de Méd., (1776, mém. p. 303), 1779.
Schleger: Programma......clavos secalinos......," 1772.
Wickman: "Heine-Medin" Disease (New York Nervous and Mental Monograph Series), 1913.
Zeviani: "Sul Catarro Epidemico" (Memorie di Matematica e di Fisica della Societa Italiana delle Scienze, xi, p. 476).
Ziemssen's "Cyclopædia of Practice of Medicine," articles: "Influenza (ii, 1875). "Botulismus," "Ergot Poisoning" (xvii, 1878).

Book Reviews.

Human Infection Carriers. By Charles E. Simon, B.A., M.D. Philadelphia and New York: Lea and Febiger. 1919.

One of the most important aspects of preventive medicine is the problem of human infection carriers in the transmission of disease. This volume presents to the medical profession the most recently acquired information on this subject, including knowledge which has been gained since the outbreak of the war in the protection of our troops from epidemics. "Human Infection Carriers" has been written primarily for students in order to give them a more thorough knowledge of the epidemiological aspects of infectious diseases and teach them to recognize carriers by laboratory methods. The author has attempted to collect in this volume all the important data concerning the most recent work and methods. This book considers the problem of human infection carriers in connection with those diseases of bacterial origin or which are due to the activity of a filtrable virus in the dissemination of which healthy persons play a part. The diseases considered include cholera, diphtheria, typhoid and paratyphoid fever, dysentery, epidemic meningitis, poliomyelitis, pneumococcus pneumonia, certain streptococcus infections, and influenza. In connection with these maladies, the author has discussed active and passive carriers, the duration of the carrier state, the habitat and virulence of organisms, the mode of infection, and the management of the carrier from the standpoint of the public health officer. In the appendix are included a list of the most important state laws, municipal ordinances, and federal interstate regulations dealing with the carrier problem. This volume should interest the medical student, the health officer, and the general practitioner.

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IN THE INTEREST OF CRIPPLED CHILDREN.

The education and care of crippled children in the United States has not received as yet sufficient consideration either by the Government, the medical profession, or the public in general. In order to present the facts relating to the provision now made for these children and the feasibility of organizing public school classes for them, an investigation has been conducted and reported by Miss Edith Solenberger, at the request of the Commissioner of the Bureau of Education. It is a regrettable truth that although there are many thousands of crippled children in this country, probably quite as many as there are deaf and blind, there is in most of the states less adequate provision for them than is available for the deaf and blind, the feeble-minded, and the incorrigible children. Not only are there no classes especially arranged for these unfortunates in many states, but there is also no equipment, such as suitable desks and seats, to lighten the burden of their deformities and make it possible for them to make the best of their handicaps.

It is of course true that crippled children desire to be like other children, and tend to grow abnormal to a greater degree than is necessary if they are made objects of unintelligent sympathy, favored pityingly by their parents, and encouraged to mingle little with other children of their own age. There is no doubt that the companionship of other children in the schoolroom and on the playground contributes greatly to the development and happiness of the cripple. Some children with slight deformities can attend regular school classes with normal children and be benefited by so doing. Others, however, need special training. These children could attend classes regularly if they were conducted with due consideration of physical limitations and if provision were made for the transportation of children and for their comfort and safety during school hours. In addition to educational and medical interests, it is to be remembered also that children who are sensitive about their appearance and incapacity find untold comfort and relief in being among children who have similar deformities and difficulties.

In six large cities of the United States,—New York, Chicago, Philadelphia, Baltimore, Cleveland and Detroit,—special classes for crippled children have been organized in public and private day schools. The day school classes show a gradual transition from private to public responsibility. Education boards generally can be convinced that it is their duty to provide a teacher and special seats and other equipment for crippled children, inasmuch as they would be entitled to their equivalent if they were normal. Two other items which cities usually are more reluctant to consider favorably are the transportation of cripples and the provision of free lunches. In Cleveland, Ohio, a school for cripples has been evolved slowly. The work was begun by a group of women known as the Sunbeam Circle; they first gathered together a few crippled children and furnished for them a teacher. Later the board of education provided the teacher and erected a suitable building for the children, and now even transports the children to school and back and provides for them free lunches. Similar results have been accomplished in Chicago, Detroit, and Baltimore.

Children are admitted generally to the classes upon recommendation of the Department of Medical Supervision. The most usual causes for crippled conditions are infantile paralysis, rickets, certain inflammatory diseases, bone tuberculosis, and accidents. Most classes include cripples of all the foregoing physical types. There are only four day school buildings in the United States,—in Chicago, Cleveland, Boston, and New York,—which were designed and built especially for the use of crippled children only; more often the children attend special public-school classes which are held in rooms set aside for them in ordinary school buildings. This is the case in Philadelphia, Baltimore, Detroit, and in some of the public classes in Chicago and New York, where the best rooms, with sunny exposure and on the first floor, are given to the crippled children. In these rooms adjustable seats and desks are provided usually, and where necessary, wheel chairs, couches, folding chairs, blankets, and sweaters are included in the equipment. In none of the public day schools for cripples are there special rooms or buildings designed for the use of outdoor classes. As fresh air is of the greatest importance in the cure of crippled children, particularly for those suffering from bone tuberculosis, it would be an advantage if public day schools would make some provision for outdoor classes. In most cases, the crippled children attending public school classes for cripples are under the supervision of an orthopedic surgeon, although the relation of the school to the surgical and medical treatment of the children varies in different cities.

In mental progress, it is remarkable to observe the good work done by a large proportion of crippled children. In spite of their physical handicaps, short sessions, and liberal rest periods, many of them are able to advance as rapidly as ordinary children. This is due in part to two facts: (1) classes are small and each child is given considerable individual attention, and (2) because of their limited physical interests, cripples are often unusually earnest students. A special problem is presented by the fact that very often both curable and incurable cripples are included in the same classes. It is important that for those who are only temporarily crippled and desire to return to their regular classes after a short time, the subjects and methods of instruction resemble as far as possible those in ordinary public school classes. As yet there are no special high schools in the United States for cripples, and no high-school buildings with class rooms offering accommodations needed by crippled children.

It is particularly desirable that the cripple, limited in the pursuit of manual occupations by his physical deformities, be given the best possible mental training to recompense him for his handicaps and provide for him some means of an intellectual career which will make small demand upon his physical capacity. The survey of what has been done by the public schools in a few cities has disclosed the need for more active interest in the welfare of our crippled children.

* * *

THE AMERICAN COLLEGE OF SURGEONS.

THE American College of Surgeons enters in its seventh year upon a new epoch of American medicine, upon an age of research and investigation full of promise for coming generations. At the annual meeting held in New York on October 20-24, 1919, the developments in the organization and administration of the Clinical Congress and of the American College of Surgeons were summarized in the report of the Secretary General.

The Congress and the College were organized as a result of the recognition by large numbers of surgeons of the superiority of clinical demonstrations in teaching and interesting surgeons in a way in which the older method of academic society proceedings with scientific papers and discussions failed to do. Previous to the organization of this society, surgeons used to assemble at various medical centers to watch the leaders in those cities; as an outgrowth of these meetings, there was founded the Clinical Congress of Surgeons of North America, which later developed into the American College of Surgeons. It was soon found necessary to establish a College to control the clinical society and to standardize the surgery exhibited at the meetings. In 1912, therefore, at a meeting in New York, attended by twenty-six hundred surgeons, a plan was suggested for the organization of the American College of Surgeons. In November, 1913, the first convocation was held and the Fellowship of the College extended to ten hundred and sixty-five surgeons, a membership which has increased to over four thousand from the United States and Canada at the present time. The increase in the membership and activities of the college made it necessary for the organization to expand and be provided with adequate space and equipment. After considerable debate, therefore, it was decided that Chicago be made the permanent home of the institution. Through the generosity of lay and professional citizens, it has been possible to secure in that city property suitable for administrative purposes for many years to come. The future expansion of the institution will include the building of the John B. Murphy Memorial Hall and its accessories, the establishment of a working museum, with its building and upkeep independently endowed, and, also through independent endowment, the establishment of a department of literary research, either with or without a medical library.

The war service rendered by the American College of Surgeons has been notable, for more than three-fourths of the Fellows of the Association have been in their country's service. But the war has not prevented progress along many lines of work, and it can be continued now with increased vigor and enthusiasm. In his presidential address, Dr. William J. Mayo has outlined the scope and purpose of the organization, and has pointed out its future policy and promise. Already, under the leadership of Dr. John G. Bowman, Director of Education, considerable progress has been made in the standardization of hospitals; for one thing, the majority of American hospitals will institute the restricted staff and will install the laboratory facilities and record systems deemed essential by the American College of Surgeons.

There will be admitted to the Association only those men who can fulfill the educational, scientific, and moral standards of the American College of Surgeons. It is hoped that in the next decade there will be eligible at least ten thousand surgeons. Dr. Mayo believes that in this generation at least, men of excellent character who possess high technical skill, although without fundamental training, should not be refused admission to the College. In future, however, it is likely that the College will require not only that the candidate be a graduate of a reputable medical school and have had hospital experience and be licensed to practise medicine, but also that he shall have had a special training in some particular surgical specialty which he is to practise. This training would require at least three years. Dr. Mayo is of the opinion that although the time spent in the professional part of a surgeon's education should not be shortened, preliminary education should be so arranged that medical students could be graduated at an earlier age. He suggests that there be adopted a six-year course of grammar school education, divested of any university significance, and a three-year high school course, in which the university be considered for the first time. In some of the cities of Minnesota, university high school courses are given with university credits, thus increasing the capacity of the university for giving advanced education.

During the seven years of its existence, the American College of Surgeons has made considerable progress toward the betterment of the surgical service to the people of North America. Now that the war no longer curtails its activities at home, the Fellows of the Association may hope to promote still further the research and investigation which will raise surgical standards and achievement in this country to unsurpassed excellence.

* * *

EXTENSION COURSES IN MEDICINE.

In commendable pursuance of an excellent policy recently established and already adopted in Worcester and Springfield, announcement is made of another series of lectures in the Worcester Extension Course of the Harvard Graduate School of Medicine. The first of these lectures was given on December 17, 1919, by Dr. James P. O'Hare on "Advanced Diagnostic Methods in Kidney Diseases." The schedule for the remainder of the course is as follows:

January 7 and 14, 1920—Dr. Franklin W. White. Lectures and Case Teaching in Gastro-Enterology.

January 21 aid 28, 1920—Dr. F. B. Lund, Surgical Diseases of the Stomach.

February 4, 1920—Dr. Lincoln Davis. Acute Surgical Conditions of the Abdomen.

February 11, 1920—Dr. Wyman Whittemore. Surgical Diseases of the Thorax.

February 18, 1920—Dr. William C. Quimby.

Diagnosis and Treatment of Surgical Conditions of the Kidney.

The lectures will be given at the Clark University, where accommodations are ample and a lantern is available. Dr. Ernest L. Hunt is the local director of the course. This series of lectures, which should be as popular as that of 1917, demonstrates the advantages of this method for bringing the benefits of expert post-graduate instruction in medicine to busy practitioners for whom otherwise it might not be available.

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MEDICAL NOTES.

Hospital Ship "Relief."—The United States Hospital Ship, *Relief*, believed to be the first of its kind ever constructed, was launched on December 23, at the Philadelphia Navy Yard. It has a displacement of 10,000 tons, is 483 feet long, and has a speed of 16 knots. The vessel will carry 560 beds, with complete operating rooms and field hospital equipment, and was built at the cost of $3,250,000.

The Lane Medical Lectures.—The Lane Medical Lectures were delivered on December 8, 9, 10, 11, and 12, in San Francisco, by Dr. Alonzo E. Taylor, professor of physiological chemistry at the University of Pennsylvania. His subject was "Feeding of the Nations at War." Dr. Taylor was sent abroad under the auspices of the American Minister to make a scientific study of the care of the allied prisoners in Germany. He was particularly interested in the food problems associated with the nutrition of people at war. During the period in which America was engaged in the war, Dr. Taylor served with Mr. Hoover's Food Administration. He was a member of the Committee on Research and Public Health of the Food Administration, and a member of the commission sent to Europe to study the alimentation problems of the allied nations. He later represented the Department of Agriculture upon the War Trade Board. Since the signing of the armistice, Dr. Taylor has been representing the Food Administration and the American Relief Administration, particularly in the Balkan countries.

Appointment of Dr. Kleiner.—It has been announced that Israel S. Kleiner, Ph.D., has been appointed professor and head of the department of physiological chemistry at the New York Homeopathic Medical College and Flower Hospital, New York City. Dr. Kleiner was formerly associate in physiology and pharmacology at the Rockefeller Institute of Medical Research.

Appointment of Dr. H. G. FitzGerald.—Dr. H. G. FitzGerald has received an appointment as Professor of Hygiene at the University of Toronto, to succeed Dr. J. A. Amyst, who has been appointed deputy minister of health in the Federal Department of Health, Ottawa.

New Building for New York Department of Health.—An appropriation of one million dollars has been granted by the Board of Estimate for the erection of a new building for the Department of Health in New York City. It will be erected on a plot of ground, 100x100, on West Thirtieth Street, between Seventh and Eighth Avenues. In it there will be provided space for the offices of the director of the Bureau of Hospitals and for the director of the Bureau of Laboratories. The first floor will be given up to the Bureau of Records, and others will be used for a health station, laboratories, and a medical library.

Washington University Medical School.—The sum of three hundred thousand dollars has been received by the Washington University Medical School, St. Louis, for the endowment of its department of pharmacology. Half of this amount was given by the General Education Board and the other half was raised by the Medical School.

Appointment of Dr. N. W. Janney.—The appointment of Dr. Nelson W. Janney, New York City, as director of the new Memorial Laboratory of the Santa Barbara Hospital has been announced. This hospital was founded by the late Dr. Nathaniel Bowditch Potter for research on metabolistic diseases

Appointment of Dr. R. B. Seem.—Dr. Ralph B. Seem of Baltimore, assistant superintendent of the Johns Hopkins Hospital, has been appointed superintendent of the Billings Memorial Hospital, Chicago.

Advance in Price of Heavy Chemicals.—A report issued recently by the Drug and Chemical Markets announces that the prices of heavy chemicals are advancing, owing to scarcity of many products and the reduction of output caused by lack of fuel. Producers of sulphuric acid have contracted for almost their entire output for 1920. The sharp advance in caustic soda during the week has brought many inquiries and considerable business. Alum, bleaching powder, ammonium sulphate, bichromate of potash and bichromate of soda are higher.

All bromides have advanced, thymol and metallic mercury are higher, and Java quinine is lower. Glycerine has been advanced by producers owing to the small output, all soap factories having felt the shortage of coal. Botanicals are higher.

Aniline salt, paranitraniline, dimethylaniline and liquid sumac are higher, and there have been no declines in the dye-stuff market.

Oil of cloves has been advanced by leading essential oil houses in New York. Spearmint oil is scarce and higher. Redistilled peppermint oil is stronger. Ceylon citronella is higher. Demand for all products is increasing and prices are tending upward.

Linseed oil is in active demand, and crushers have advanced the price for deliveries from December to March. Other vegetable oils are dull. In animal oils there is a steady business, and fish oils are somewhat scarce and prices are firm.

Bubonic Plague.—Reports from two countries mention outbreaks of bubonic plagues recently. Word has been received from Constantinople that the disease is spreading among the poorer districts of the Turkish capital and that it is even invading European quarters. The bubonic plague is reported to have attained grave proportions also at Las Rosas, Santa Fe Province, Argentina, where there have occurred several deaths. The sanitary committee has asked for help, and the National Department of Hygiene has begun a war on the rats infesting grain warehouses.

Gift to the Yale School of Medicine.—Property valued at $200,000 has been given to the Yale School of Medicine for general endowment by the death of Mrs. Levi Shoemaker of Wilkesbarre, Pennsylvania.

Appointment of Dr. Robert Gesell.—Dr. Robert Gesell, of the Department of Physiology in the Washington University Medical School, St. Louis, has received an appointment as Professor of Physiology in the University of California.

Warning Against Typhus.—The League of Red Cross Societies has issued a warning of the danger of the spread of the typhus epidemic to Western Europe and America unless additional aid is given the campaign against the spread of the disease in Poland. France, Portugal, and Rumania have responded promptly. At the request of the French Red Cross, the French Government will be asked to appropriate 1,000,000 francs (normally $193,000, now about $105,000) for establishing additional sanitary units in Poland. The Portuguese Red Cross has given 5000 francs for the campaign, and the Red Cross in Rumania has set aside 20,000 francs for this purpose.

BOSTON AND MASSACHUSETTS.

Week's Death Rate in Boston.—During the week ending December 20, 1919, the number of deaths reported was 210 against 334 last year, with a rate of 13.75 against 22.20 last year. There were 32 deaths under one year of age against 38 last year.

The number of cases of principal reportable diseases were: Diphtheria, 62; scarlet fever, 77; measles, 210; whooping cough, 38; tuberculosis, 47.

Included in the above were the following cases of non-residents: Diphtheria, 12; scarlet fever, 12; tuberculosis, 3.

Total deaths from these diseases were: Diphtheria, 2; measles, 4; whooping cough, 1; tuberculosis, 19.

Included in the above were the following non-residents: Diphtheria, 1; tuberculosis, 3.

Influenza cases, 7.

The Norfolk District Medical Society.—A meeting of the Norfolk District Medical Society was held at the Boston City Hospital on December 30, 1919. Visits were made to the wards of the South Department and a demonstration was given of the Schick test. Among the subjects considered at the meeting were "Periods of Contagiousness and Manner of Spread of Acute Exanthemata," "Treatment of Pertussis," and "The Diphtheria Problem." The meeting was held under the supervision of Edwin H. Place, M.D., Physician in Chief of the South Department.

The Society of American Bacteriologists.—Meetings of the Society of American Bacteriologists were held in Boston on December 29 and 30, at the Harvard Medical School, and on December 31, at the Institute of Technology.

Massachusetts Society for Mental Hygiene.—At the annual meeting of the Massachusetts Society for Mental Hygiene, Tuesday afternoon, December 9, 1919, at the Twentieth Century Club rooms, the members present elected Mr. Herbert C. Parsons and Mr. G. B. Johnson to serve for a term of five years on the Board of Directors, together with the following, who were reëlected:

Dr. Walter F. Dearborn, Dr. George T. Tuttle, Dr. A. E. P. Rockwell, Mr. Alvah Crocker, Miss Edith N. Burleigh, Rev. Fr. M. J. Scanlon, Dr. E. W. Taylor, Dr. L. Vernon Briggs, Dr. Samuel B. Woodward, Dr. William N. Bullard.

After the reading of the reports, the President of the Society, Professor William H. Burnham, gave a very interesting talk on how the scope and aim of mental hygiene seem to enlarge every year and thus the opportunity for service in this field was never so inspiring as it is today. In this connection he spoke of the urgent need of mental hygiene in the schools; he said that "nearly all of the troublesome members of society, the incompetent, juvenile delinquents and those in the hospitals for the insane, at some time passed through our schools"—and that nearly all of the irresponsible, the combustible material that spreads the contagion of disorder and unrest, were also in the public schools a few years ago.

President Burnham called for remarks from the members and President Charles W. Eliot spoke on the relation of the public schools to mental hygiene and of industry to mental hygiene. He pointed out the fact that we need the aid of mental hygiene societies to enable our public schools to develop all the finer qualities in human nature, not only to make the dull brighter, but to enable our schools to develop with special care our superior children. "The whole field of industry is wide open to the aid of societies just like this and to men who are being successful in testing mental qualities."

NEW ENGLAND NOTES.

War Relief Funds.—The principal war relief funds of New England have reached the following amounts:

French Orphanage Fund	$531,020.38
Italian Fund	316,368.26
French Wounded Fund (for the American Memorial Hospital at Rheims)	280,402.74
Polish Fund	134,004.11

Miscellany.

RÉSUMÉ OF COMMUNICABLE DISEASES FOR SEPTEMBER, 1919.

GENERAL PREVALENCE.

In the month of September there were 4,190 cases of communicable diseases reported compared with 6,726 cases for the same month the previous year.

Anthrax.—Four cases were reported during the month, of which number three received their infection from hides. The remaining case was apparently infected by a shaving brush he had recently bought. As he burned the brush, a laboratory examination could not be done.

Diphtheria increased markedly over the August total, in which month 324 cases were reported, whereas 529 cases occurred in September. The increase in cases is in the eastern and northeastern sections of the state.

Influenza is showing no signs of becoming epidemic at the present time. There were 226 cases reported in September.

Measles increased 43 cases over the previous month, 179 cases being reported for the current month. This disease seems more active in the area south of Brockton.

Scarlet Fever.—There were 407 cases of scarlet fever in the state during the month, an increase over the 248 cases reported in August. The communities showing the greatest increase are grouped in the northeastern part of the state.

Typhoid Fever cases increased from 135 cases reported for the previous month to 146 cases for September. Of these cases, eight were due to infected milk, in two cases the milk was infected by a carrier and the infection was received while on a trip to New Hampshire. Contact with persons ill with typhoid was responsible for 15 cases. Food, infected by a probable carrier, caused 11 cases. Drinking water from a polluted spring and a polluted well, each found to contain colon bacilli, caused seven cases. There were 83 cases in which the source of infection was not found and case records for the remaining 22 cases have not yet been received.

Typhoid Fever Outbreaks.—An outbreak of 11 cases of typhoid fever occurred in Attleborough. Investigation by the local health officer and the State Department of Health failed to definitely locate the cause. Careful investigation excluded a suspected water supply and ice supply. The evidence collected was finally sufficient for epidemiological purposes to determine the cause to be a food handler who is probably a carrier. He denied ever having had the disease but has a positive Widal test. Repeated examinations of his feces and urine were negative, so the typhoid bacilli are probably given off at intermittent periods. For this reason the suspected carrier is not working at an occupation that necessitates his handling food.

In Lowell six cases were reported in addition to three August cases, all cases taking milk from the same milk dealer. Investigation was at once carried out by the local board of health and State District Health Officer and evidence collected showed that bottles were being collected from houses where persons were sick with typhoid fever. Examinations were carried out on employees of the milk route and dairy, but no carriers or clinical cases were found on the milk route, thus the infection was apparently spread by infected milk bottles.

RARE DISEASES.

Anterior Poliomyelitis was reported from Boston, 2; Fall River, 1; Holyoke, 1; North Adams, 1; Palmer, 1; Revere, 1; Swampscott, 1; Weymouth, 1; total, 9.

Anthrax was reported from Boston, 1; Chelsea, 1; Peabody, 1; Salem, 1; total, 4.

Dog-bite was reported from Dartmouth, 1; Lowell, 1; Taunton, 1; total, 3.

Dysentery was reported from Boston, 2; Brookline, 1; Cambridge, 1; Quincy, 2; total, 6.

Epidemic Cerebrospinal Meningitis was reported from Boston, 9; Chelmsford, 1; Chelsea, 1; Cohasset, 1; Fall River, 1; Framingham, 1; Lowell, 2; Lynn, 1; Somerville, 1; Ware, 1; total, 19.

Malaria was reported from Barre, 1; Boston, 2; Lexington, 1; Northbridge, 1; total, 5.

Septic Sore Throat was reported from Arlington, 1; Boston, 1; Cambridge, 1; Fall River, 1; Haverhill, 1; Lowell, 4; Medford, 1; New Bedford, 2; Newburyport, 2; Somerville, 1; Wareham, 1; Wayland, 1; Woburn, 1; total, 18.

Tetanus was reported from Barnstable, 1; Franklin, 1; Pittsfield, 1; Somerville, 1; Worcester, 1; total, 5.

Trachoma was reported from Boston, 4; Cambridge, 1; Northampton, 1; total, 6.

NOTICE.

Boston City Hospital.—The January clinical meeting of the Boston City Hospital will be held on Thursday, January 8, 1920, at 8 P.M., in the Cheever Surgical Amphitheatre.

Program:—Case demonstrations; Clinical Value of Laboratory Blood Findings, Dr. Larrabee; Interpretation of Wassermann Reactions, Dr. Boardman; Relative Clinical Value of Kidney Tests, Dr. Ohler; Value of Protein Skin Reactions, Dr. Sanborn; Discussion by Drs. E. Joslin and Roger I. Lee.

Halsey B. Loder, *Chairman.*

SOCIETY NOTICES.

Suffolk District Medical Society.—A combined meeting of the Suffolk District Medical Society and the Boston Medical Library will be held at the Library, 8 The Fenway, on Wednesday, January 14, at 8.15 P.M.

Dr. Francis Carter Wood, Professor of Pathology at Columbia University, and Director of Cancer Research for the George Crocker Research Fund, will speak on "Some Vital Problems in the Diagnosis and Treatment of Cancer."

Guests will be welcome.

Middlesex South District Medical Society.—The regular midwinter meeting of the society will be held at the Boston Medical Library, on Wednesday, January 14, 1920, at 12 o'clock, noon.

Dr. Cyril Richards will give a lantern-slide demonstration and talk on clinical diagnosis, surgery and pathology of the urinary tract. The discussion will be opened by Dr. John H. Cunningham.

Lyman S. Hapgood, *Secretary.*

New England Pediatric Society.—The sixtieth meeting of the New England Pediatric Society will be held at the Boston Medical Library on Friday, Jan. 16, 1920, at 8.15 P.M.

The following papers will be read:

1. The Feeding of Normal Babies, with Special Reference to Milk Modification, Maynard Ladd, M.D., Boston.

Discussion to be opened by W. W. Howell, M.D., Boston; and A. C. Eastman, M.D., Springfield.

2. The Feeding of Normal Children during the Second Year, John Lovett Morse, M.D., Boston.

Discussion to be opened by Charles H. Dunn, M.D., Boston.

3. Chronic Intestinal Indigestion in Children over One Year of Age, Philip Sylvester, M.D., Newton.

Discussion opened by K. G. Percy, M.D., Boston.

Fritz B. Talbot, M.D., *President,*
Lewis Webb Hill, M.D., *Secretary.*

ERRATA.

We regret the occurrence of the statement in the issue of the Journal for December 25 that Dr. Frederic A. Washburn served during the war as chief surgeon of Base Hospital No. 5. He sailed overseas as commanding officer of Base Hospital No. 6, and later was chief surgeon of Base Section No. 3, American Expeditionary Forces. (This section took in Great Britain and Ireland.)

In an editorial published in the issue of the Journal for December 25, and headed "Classification of Diseases," credit for this work was given to a committee of physicians. It was the work of a committee of record librarians representing the large hospitals of the city, whose work was approved, prior to publication, by the Committee on Uniform Nomenclature.

RECENT DEATHS.

Dr. Allan McLane Hamilton died, on November 23, at the age of 71 years. Dr. Hamilton was at one time professor of mental diseases at the Cornell Medical College.

Dr. John J. Hayes died recently at his home in Boston, at the age of 69. Dr. Hayes was born in Pembroke, Me. At the age of 17 he came to Boston and entered the medical school at Boston University. After graduation he served in a boys' reform school in Providence, and later with the Dedham County Jail and House of Correction. For the last 25 years of his life he practiced medicine in Boston.

Dr. Herbert Orray Benner died at the New England Baptist Hospital, December 22, 1919, aged 54 years. He was a native of Waldoboro, Me., a graduate of Dartmouth Medical School in the class of 1896, and had practiced in South Framingham since 1898 when he joined the Massachusetts Medical Society.

The Boston Medical and Surgical Journal

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Original Articles.

THE ORIGIN OF THE INTRAPELVIC TREATMENT OF THE STUMP AFTER SUPRAVAGINAL HYSTERECTOMY FOR FIBROID TUMOR OF THE UTERUS.[*]

By J. Riddle Goffe, A.M., M.D., F.A.C.S., New York,

Professor of Gynecology, New York Polyclinic Medical School and Hospital; Consulting Surgeon, Woman's Hospital.

It is the disposition and custom of the medical student as he sees surgical methods and procedures enacted before him from day to day to take them for granted as methods and procedures that, as a matter of course, have existed for all time as finished products, and are now being passed on to him. Little does he realize the toil and solicitude with which they have been brought into the world until, by some fortuitous circumstance, he discovers that they have a history, reaching back perchance through many decades, evolved from generation to generation down to the present day. A similar attitude obtains also to a certain extent in the general profession. Take for example the procedure of ligating the pedicle of a simple ovarian cyst and dropping it back into the pelvic cavity. How difficult to realize that any other usage could ever have been in vogue. But although this method was used by Ephriam McDowell, the father of ovariotomy, in the first recorded case of ovarian tumor that was ever removed, the disastrous consequences from secondary hemorrhage and sepsis that followed its use in the hands of his successors led the profession to resort to transfixing the pedicle with pins or fastening it with clamps and leaving it projecting through the abdominal wound. And this was the prevalent method even down to about 1878, when it was abandoned and the original technique universally adopted.

Now I doubt not that the present method of disposing of the pedicle after supravaginal hysterectomy for fibroid tumors, which is employed almost universally by operators today and viewed by thousands of students, is regarded by them as obviously the most natural way and probably employed by the first operator, and that women afflicted with fibroids have been relieved through unrecorded time in the same manner.

But the history of the invention of this procedure represents an entirely different picture.

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[*] Read before the American Gynecological Society, June, 1919.

The various efforts to remove fibroid tumors were fraught with great suffering and pain to the patients, attended by most unsatisfactory results and followed by a frightful death rate. The method naturally suggesting itself was that employed in removing ovarian tumors, viz: to constrict with a ligature, usually rubber elastic, a steel clamp, a wire or chain écraseur, to bring it up through the abdominal wound and transfix it with long pins, which extended out onto the abdomen to keep it from slipping back into the abdominal cavity. The first consideration was to control the hæmorrhage, and the second, to prevent infection from the sloughing stumps. As a typical picture of the standard operation let me quote you the description of an operation by the eminent, well-known surgeon, L. A. Stimson, of New York, and published in the *Medical Record* as late as October 4, 1884:

> "After division of the peritoneum, a pedunculated tumor with long pedicle was turned out. The left ovary was found to lie at some distance from the uterus and a double silk ligature was passed through the broad ligament below the pampiniform plexus by means of an ivory pin and tied on each side of the ovary; the latter was then cut off. The uterus, studded with tumors, was then drawn forcibly up, and its neck, which was long and free, was transfixed from backward, and an ivory pin, and a double India rubber cord 4 millimeters in diameter was drawn through and tied around each half. On the left side, the India rubber ligature passed just below the ligature that had just been placed upon the ovary; on the right side it passed on the outside of the ovary, and embraced the entire thickness of the broad ligament. Each ligature was drawn very tight and secured by tying it in a single knot and fastening the ends together close to the knot by a loop of silk. The uterus was then cut off and the stump brought up to the lower angle of the wound and transfixed with two long pins close to the ligatures in the distal side. The peritoneum, the muscular layer and the skin were each united with a continuous catgut suture and three silver wire and button sutures, not including the entire thickness of the wall, applied to bear the strain. A decalcified bone drain was placed in the parietal wound between the skin and the peritoneum, extending from the upper angle of the wound to the stump; iodoform gauze and body bandage applied."

Dr. Stimson evidently considered this a masterful piece of work or he would not have published it. And this was only a few years before I invented my procedure.

The after-treatment was a source of constant solicitude and consisted of watchful care of the stump, turning the key of the écraseur or the nuts of the clamp every day or two as the pressure cut into the pedicle or the tissues shrunk. When necrosis began, the stump was kept moist with sulphate of iron or dried with iodoform powder. It was difficult to prevent infection and the patient died of septic peritonitis or the pedicle tore away and fatal hæmorrhage ensued. The death rate was appalling.

TABLE I.—CASES REPORTED BY KNOWLSLEY THORNTON, 1882.

	CASES	DEATHS	RECOVERIES
Pean, up to November, 1879	46	16	30
Spencer Wells, to November, 1881	39	28	11
Billroth, to March, 1880	25	15	10
Knowlsley Thornton to August, 1882	25	9	16
Bantock, to 1882	21	6	15
Schroeder, to December, 1879 ..	18	7	11
Hogas and Kaltenbach, to 1881	12	1	11
Savage, to 1881	9	3	6
Thomas, to September, 1880	7	3	4
	—	—	—
	202	80	112

Such was the treatment of fibroid tumors during my internship at the Woman's Hospital, 1881 to 1883. The death rate from ovariotomy at that time was 25 per cent., and from hysterectomy for fibroid tumors 30 per cent., 40 per cent., 50 per cent., and even higher. The few that recovered endured a long, painful, sickening convalescence of from six weeks to two or three months, many of the patients being crippled for life by a painful distorted bladder, the aching drag of the stump upon the abdominal wall, or a ventral hernia.

The horrors of the operation and the sad fate of these unfortunate patients made a deep and abiding impression upon me, and I pondered the situation well. I had not yet begun any systematic reading of either current medical literature or any standard works, and I knew nothing of what was going on in the surgical world outside of what my eyes had seen. I could not, however, get away from the conviction that, sometime, some way would be devised of treating the pedicle after supravaginal hysterectomy so that it could be dropped back into the abdomen and the cavity closed as in ovariotomy. The conditions upon which such an effort should be based were: that it must be safe—safe against hæmorrhage at the time of the operation (for I had seen patients die of hæmorrhage upon the operating table); safe against subsequent hæmorrhage, and safe from sepsis due to suppuration of the stump.

These three essential factors were constantly before my mind, and I considered them in every aspect. With a clamp upon the cervix, it could not, of course, be dropped into the pelvis. But why a clamp? Why not a ligature? If in ovariotomy the pedicle ligature did not slip or relax until the blood-vessels were occluded, why should it not accomplish the same results here? Or perhaps the ligature might be so placed as to compress the blood-vessels against the cervix as they coursed through the broad ligaments, and thus afford hæmostasis. That was what the elastic ligature did that was applied before the fundus and tumor were cut away in Stimson's operation, so that the clamp could be applied. Why not the ligature? But, of course, the pedicle must be transfixed to prevent slipping of the ligature. Well, the bladder had to be dissected off the tumor and the uterus to apply the clamp; the ligature must be applied in the same place by transfixing the cervix with a double ligature, tying either side, and throwing the bladder over it. It seemed feasible, but would I dare to do it? Had any one ever dared to do it? Not that I had ever heard—nor did I know that any one had ever suggested it.

With this picture in my mind, I went over in my day dreams and sometimes in the night, the successive steps of the standard operation that I had seen; the abdominal incision, the curved incision over the bladder, the turning down of the bladder and its peritoneal flap out of harm's way, the application of the elastic ligature around the whole mass of uterus and broad ligaments, the amputation of the mass, the adjustment and tightening of the clamp, the removal of the elastic ligature, the passing of the long pins through the cervix underneath the clamps, the stitching of the bladder and cervical peritoneum to the abdominal peritoneum to prevent leakage into the abdominal cavity, the adjustment of decalcified bone drains and gauze packing and the final stitching up of the wound. Then I would go over the steps of my fancied procedure, comparing one with the other, step by step, until it became somewhat of a nightmare, but always with the conviction that it had in it the promise of success and was worth a trial. With this conviction in my mind, with the reckless assurance of the young hospital graduate, I waited my first case.

Upon leaving the Woman's Hospital, I had no connection with any hospital service, so my prospects of a chance to win my spurs in this field were anything but alluring, especially as I had secured a class at Memilt Dispenssary in diseases of children and devoted my spare time, of which I had abundance, to that specialty. Days and weeks and months and years slipped by until at last the long awaited day, May 26, 1888, arrived—just five years to a month since I left the hospital doors. Upon that day there appeared at my office Ann McE., of New York City, who gave the following history:

A cook, aged 40, married 14 years ago. The husband had lived only five months; and she remained a widow since. She was never pregnant, and her menstrual history was normal. For the past three years had suffered backache and difficult and painful defæcation; for the past six months, frequent and painful micturition. The latter had so annoyed and worried her and deprived her of sleep, that she had lost flesh and she was in a desperately nervous condition.

She had consulted a prominent gynecologist of this city, who told her that she had a tumor and sent her to the Woman's Hospital for observation. She entered the service of Thomas Addis Emmet. After repeated examinations she finally was dismissed with the opinion that if any operation were attempted, she would die upon the table; to go home and have her teeth repaired and let herself alone; especially must she avoid any ambitious young doctor who might want to operate upon her. The following day, May 26, 1888, she appeared at my office, told her story, and wanted to know if I could do anything.

Upon examination I found a hard, irregular fibroid tumor, with deep serrations, entirely filling the pelvis, and so deeply wedged in that even the slightest motion was impossible. Large nodules, also, reached up into the abdomen. I told her I believed I could relieve her; that the tumor could probably be lifted out of the pelvis, and, if favorable for complete removal, could be taken away. She only too gladly accepted the proffered relief and entered St. Elizabeth's Hospital. Three days later, May 29, with the assistance of A. P. Dudley, Marcus E. Tully, and George Tucker, I operated

The tumor was with the greatest difficulty lifted out of the pelvis, and I proceeded at once to its removal.

The first step was to dissect off the bladder, which had spread itself over the anterior face of the tumor to the height of six or seven inches. This was done by following the curve of the attachment of the bladder in an elliptical incision through the peritoneum across the face of the tumor, and dissecting off the bladder down to the vaginal junction. An elastic ligature was then thrown around the entire mass exclusive of the bladder, but including the ovaries and tubes of both sides, securely tied and the main part of the tumor cut away. Before severing the connection of the broad ligaments, the uterine extremity on each side was grasped by a strong clamp forceps to prevent its slipping out of the ligature. The pedicle was then transfixed below the elastic ligature, but within the flap with strong Chinese twisted silk, and tied on either side like the pedicle of an ovarian tumor. The elastic ligature was then removed. There had been no loss of blood except what escaped from the tumor when it was cut away, and a constant slight oozing from the flap that had been dissected off with the bladder.

The stump was then trimmed down as near to the ligature as was deemed safe, and the opening of the cervical canal thoroughly cauterized with pure carbolic acid. The large extent of raw surface on the bladder flap made it necessary that it should be disposed of in some way, and it occurred to me that it could be drawn over the top of the stump like a hood and, if drawn tightly enough, primary union might be secured and the distal end of the stump nourished through the flap. If not, the cervix could be dilated and used as a drainage tube. This was accordingly done, the flap reaching well down on the posterior surface of the stump below the exit of the ligature, where it was firmly stitched along its entire border with continuous catgut suture. The stump was thereby shut out of the peritoneal cavity, and was dropped back into the pelvis. The abdominal wound was closed with silk and the patient put to bed. The tumor was a hard multiple subperitoneal fibroid, extremely irregular in shape and weighed six and one-half pounds.

The patient rallied well from the operation, was free from pain, with the exception of slight backache, and had no untoward symptoms until the fourth day, when the temperature went up to 101.5°, and the fifth day to 102°. This meant suppuration of the stump under the flap with danger of pus bursting into the peritoneal cavity unless an exit was made for it some other way. Therefore I lifted the patient onto a table, slipped a bivalve speculum into the vagina to expose the cervix, through which I passed without difficulty a Simson sound and then the steel dilators. A gentle amount of pressure gave exit to a dram of thin pus and broken down tissue. A double female catheter was then passed and the cavity washed with carbolized solution, after which a nickel drainage tube about two inches in length was inserted, to which was attached a rubber tube leading out of the vulva to carry off the discharge. The dilatation was repeated every third day and the cavity thoroughly washed through a catheter for four sittings, after which the temperature continued normal, and the discharge was reduced to that of a slight leucorrhea. The patient regained her strength rapidly, was sitting up at the end of three weeks, and on June 29, just one month from the day of operation, she rode in the street-cars a distance of at least three miles, walking to and from the hospital to the car line. Shortly after this she went to the country for the summer. In September she appeared at my office, fleshy and well, but complained of a slight moisture about the vagina. Upon examination bimanually I found the stump smooth, freely movable, and about the size of a virgin uterus. Upon passing the speculum a white silk thread was discovered presenting at the external os, which, upon being lifted out, proved to be the ligature. The patient continued in perfect health and, despite the fact that she had neither uterus, ovaries, nor fallopian tubes, was a second time joined in happy wedlock in October of that year.

This was indeed a triumph. To my joy and delight the great problem seemed to be accomplished, and that, too, in the most simple, logical and natural way. Hæmorrhage was perfectly controlled so that the patient lost no blood either at the time of operation or subsequently. To be sure, suppuration had occurred, but the peritoneal cavity was protected against invasion by the peritoneal flap covering the stump, and evacuation of the pus promptly and readily secured through the natural cervical canal. Consequently the patient had survived the operation and gotten well as comfortably as after an ovariotomy. What is more, the organs of the pelvis were restored to almost ideally normal positions and relations, all traumatic tissue was disposed of with the nicety of a plastic operation, and the abdominal and pelvic organs resumed their functions normally and satisfactorily. What a different picture from that presented by the old established method. Two cases followed this the succeeding year, in both of which all the steps of the procedure as described were carried out, the same experiences attended the convalescence, and the results were the same.

In the fourth case the technique was modified by ligating the ovarian arteries in the broad ligaments.

First I placed upon the broad ligaments outside of the ovary and tube, a strong clamp forceps reaching down to the uterine artery and, after similarly placing another near to the mass to prevent regurgitation from the uterine side, I cut the broad ligament down between them as far as their points. The other side was treated similarly and then the lower angle of these incisions was connected in a curved line; first across the anterior face of the tumor following the contour of the bladder and then the posterior through the peritoneum—to form the flaps of the stump—and the peritoneum reflected. This feature of the operation was illustrated by drawings in my original paper which I reproduce here.* An elastic ligature was now thrown around the mass inside these flaps and forced well down. The main part of the mass, including the ovaries and tubes, was cut away. The pedicle was then transfixed inside the flaps with strong Chinese twisted silk and tied on either side so as to include the uterine arteries and veins, the elastic ligature removed and the stump trimmed down. The open ends of the broad ligaments were now to be disposed of. First, the ovarian arteries were searched out and ligated with catgut. Then the flaps were brought up into position and trimmed to fit. Commencing then at the upper border of one broad ligament, the raw surface was covered in by an over-and-over continuous stitch of catgut down the width of the ligament, then over the top of the stump, stitching firmly the flaps, and then up the width of the other broad ligament to its free border; so that all there was to be seen in the bottom of the pelvis was smooth peritoneum, with this continuous line of catgut suture running across from side to side.

Upon removing the clamp forceps on the left broad ligament, when I reached the tip of it in the process of whipping over and over the edges, there came a sharp hæmorrhage from the uterine artery on that side which I had evidently cut when I severed the broad ligament. It was quickly caught, however, and ligated with catgut.

The remainder of the operation was completed as usual and the patient put to bed. The tumor was a fibromyoma and weighed four and one-quarter pounds.

The patient made an uninterrupted recovery and left the hospital December 23, thus making the fourth successive case of recovery by this method.

Here, then, was an entirely novel and original method, embracing new untried features and meeting all the requirements of a perfected surgical procedure. First and foremost it solved the problem of dropping the pedicle and closing the abdominal incision without drainage. Secondly, it covered all raw surfaces. Third, it fastened the infundibulo-pelvic and round ligaments to the stump, thus giving support to the pelvic diaphragm. And lastly, it restored the pelvic organs to their normal positions and relations in the pelvis, disposing of the traumatic tissue with the nicety of a plastic operation. All this I pointed out in my first paper describing the operation.

I wrote out a careful description of the operation in a detailed report of the four cases and presented it in a paper before the Obstetrical Section of the New York Academy of Medicine in March, 1890. It met with most cordial approval and many complimentary remarks at the hands of the Fellows of the Academy who discussed it; namely, Dr. Janvrin, Dr. Hanks, Dr. George Tucker Harrison, Dr. A. P. Dudley, and others. The paper appeared in the following month, April, 1890, in the *American Journal of Obstetrics and Diseases of Women and Children.* The operation was employed with varying degrees of success by Dr. Janvrin, Dr. Harrison, Dr. A. P. Dudley and others, but I have never seen any report of their work in print.

I had dared to drop the pedicle into the peritoneal cavity, I had demonstrated its safety, and its efficiency in four successful cases and the problem of fibroid tumors was then and there solved.

In September, 1892, four years and five months after my first operation, and two years and four months after the publication of my first paper, Dr. Baer, of Philadelphia, read a paper before the American Gynecological Society in which he reported 10 cases of fibroid tumors with one death operated upon by him by what he claimed was an entirely new and original operation. Now, on careful analysis the operation, in its essential features, was my operation, modified by systematically transferring the main ligature from the cervix to the uterine vessels in the broad ligaments. While this modification was a refinement in this one detail of my original operation which I gladly recognize, it was not essential to the success of the procedure; for while Dr. Baer reported 10 cases with 1 death, my first series detailed four with no death, and my second publication recounted 15 with 1 death. It was, therefore, only a modification of one feature—a refinement, to be sure, but of minor importance in comparison with my original concept; its audacity and its perfection of detail. Therefore, I claim precedence as the inventor of this operation, and if any name is to be attached to it, it should be known as the Goffe operation.

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* Am. Jour. Obst., April, 1890.

It isn't a question of non-essential detail that we are discussing today. Just how a clamp is applied or a ligature placed is insignificant in comparison with the larger question of whose was the genius to conceive the original idea; whose the daring to put it to the supreme test of actual practice on a living patient, and to demonstrate (in four successful cases) its assured safety and ultimate beneficial results over anything that had ever been undertaken in dealing with fibroid tumors. And not only that, but I venture the opinion that there is no operation in the whole range of gynæcic procedure, dealing with an equally serious condition, that is attended with so little loss of life and is fraught with so much satisfaction to both patient and operator. Today it is the accepted standardized operation in every surgical clinic throughout the world; It has made it possible, as recorded by Dr. LeRoy Braun, to operate upon 262 cases of fibroid tumor in one year, *viz.*, 1918, at the Woman's Hospital, New York, with a mortality of 4 patients or 1.52 per cent. Compare this with the record of an equal number of operators as presented by Knowlsley Thornton in 1882 by the old method; 202 cases, 80 deaths; a mortality of 39.6 per cent. (See Table I).

The credit for inventing such a procedure is an honor worth guarding with jealous care. The procedure is in some clinics known as the Baer operation and by many believed to have been invented by him. Regarding this, I desire to make the following animadversions:

My operation was a successfully demonstrated widely published and well recognized procedure before Dr. Baer performed his first operation. That Dr. Baer was perfectly familiar with my work is apparent from the internal evidence of his article itself. His title, "Supra-Vaginal Hysterectomy without Ligature of the Cervix," evinces an effort to put his work in as strong contrast to mine as possible. Then the emphatic statement reiterated, that no antiseptic is applied to the cervix, and the seeming indifference to covering the stump with peritoneal flaps bears out this contention, although later he adopted both of these steps in his technique. In my fourth case I applied clamps to the upper border of the broad ligaments and ligated both ovarian arteries in continuity in the broad ligaments. This is fully described in my original paper and illustrated by drawings showing just how clamps and ligatures are applied. What is more, I ligated the uterine artery and vein in the broad ligament on one side. Why I did not appreciate then and there the refinement of this procedure and apply it to the uterine vessels on the other side and so establish that step in the technique I can only explain by the overpowering mental impression inherited from the old operation that the cervix must be compressed. In retrospect this is the more to be wondered at because in the meantime Dr. Lewis Stimson had become a convert to the application to fibroid tumors of Freund's total hysterectomy for cancer, and minutely described and laid great stress upon the method of ligating the blood-vessels in continuity in the broad ligaments. He published two articles on this subject, one in the *New York Medical Journal*, 1889, and one in the *Philadelphia Medical News*, 1890. Both of these articles appeared before Dr. Baer did his first operation and must have been very suggestive to anyone approaching the subject with an unbiassed mind.

There is one more question that requires elucidation and that is A. P. Dudley's relation to the operation. Dr. Dudley and I were colleagues of equal rank for 18 months on the House Staff of the Woman's Hospital, New

York. We were the best of friends. Upon graduating, he went to San Francisco and became associated with Dr. Scott of that city. I never saw nor heard of him again until the day before my first operation when, to my surprise, I met him by chance upon the street, and after a little reminiscence I told him I was going to operate the following day for fibroid tumor and would be glad to have him present and perhaps give me a hand as in days of old. His response was: "Well, Goffe, I'll do it—glad to."

There were present Dr. Dudley, Dr. M. E. Tully, with whom I shared my office, and Dr. Tucker, my first assistant at the Polyclinic. Dr. Dudley and Dr. Tucker are both dead; Dr. Tully is still living. Out of courtesy, as I explained to the others, I asked Dr. Dudley to act as first assistant, which he did. He made no reference to his having done anything similar in California. He was very enthusiastic about the operation, profuse with congratulations, and was loud in his assurances that the patient would recover, " 'Cause she ought to." The one thing and the only thing that he suggested and, indeed, insisted upon was disinfecting the cervical canal with pure carbolic acid.

While in the dressing room, after the operation, we discussed the procedure in detail, and he laid great stress on my device of passing the ligature inside the peritoneal flap and covering every raw surface so that the entire stump, ligature and all, should be extraperitoneal. He was greatly impressed by it and thereupon suggested the name "intra-abdominal but extraperitoneal."

Summer came and I did not see Dr. Dudley again until autumn. He came to see me one day and said he was going to do "that operation" soon and would I assist. I assured him I would and did. A coil of the intestines was badly mixed up with the appendages of the right side and was seriously injured in its separation. All the steps of the operation, as I had done it in his presence, were carried out. Meeting him a few days later I inquired about the patient, only to learn that she had died. "What!" I said in surprise, "You don't mean it." In his characteristic way, he replied, "Yep, she died."

Dr. Dudley never put on paper or published any description of what is claimed as his part in originating this procedure. In the discussion following Dr. Baer's paper, Dr. Dudley said: "Dr. Goffe is my friend, and I would not take the slightest credit from him. But I had been talking of this method two years before Dr. Goffe read his paper. With one exception I did the same operation in California, in 1884, the exception being that the double ligature which was put around the stump was not covered by the peritoneum, otherwise the operations were identical. I assisted Dr. Goffe when he did his operation later."

Now, granting that all this is true, I cannot see how it detracts in the least from credit due me for entire originality in the procedure. Dr. Dudley says that he had been talking about this operation for two years before Dr. Goffe read his paper. That might be, and yet all his talk might have been after he had assisted me in my first operation, for that was practically two years before I read the paper.

What became of the California case no one knows. Dr. Dudley does not say whether the patient lived or died. He never put the case on record and he never repeated the operation. But that case does not detract in the least from credit due me in devising my operation. I had not heard of it. Moreover, it could have had no part in my first operation for I had thought that out in all its details before I began it, and had made all arrangements in my mind for carrying out all the successive steps of the operation before I knew that Dr. Dudley was in town or that he was to assist in any way. How otherwise should I have dared to undertake it?

As a result of my work along this line I became interested in knowing what had been done in other countries looking to a solution of the problem of fibroid tumors. At the annual meeting of this Society in 1893 I presented a paper recounting the efforts that had been made in France, Germany and the British Empire to devise a method by which the pedicle could be dropped into the pelvis. Among the distinguished men who exercised their ingenuity in this effort stand prominently the names of Kaltenbach, Schroeder, E. Martin, and Mr. Milton, Cairo Hospital, Egypt. With the exception of Milton, their methods were all faulty in one particular, that they did not safeguard the peritoneum against infection and the death rate was too high to commend them to general approval.

The operation under discussion today derived no inspiration from them. It is purely American—the product of American ingenuity, courage, forethought, prudence, patience, and perseverance. It has superseded all other operations in every country of the world, and stands today without a peer as *the operation par excellence.*

RESULT OF TREATMENT OF NEUROSYPHILIS (GENERAL PARESIS AND CEREBROSPINAL SYPHILIS). REPORT OF PATIENTS' CONDITION FOUR YEARS OR MORE AFTER LEAVING HOSPITAL.

By H. C. Solomon, M.D., Boston.

[From the Massachusetts State Psychiatric Institute, Boston.]

In the Bulletin of the Massachusetts State Board of Insanity for February, 1916, I published a series of ten cases of neurosyphilis, eight diagnosed as general paralysis and two as cerebrospinal syphilis, to show the very favorable results that may be obtained with treatment. Many requests have been received since then asking for data as to the further outcome. The only proper criterion of the results of treatment in neurosyphilis is the condition of the patient and his ability to live a normal life in the community. Therefore it seems justifiable to reconsider these patients now that at least four years has elapsed since leaving the hospital.

A chart summarizing the findings in these cases as well as brief notes as published in 1916 is here given and then the further course to September, 1919. Only one case has been lost, No. 9. The patient was a foreigner speaking practically no English and we were unable to keep in touch with him.

1. Patient showed signs of character change for nearly two years before commitment. While in hospital had seizures resulting in transient hemiplegia of a few hours' duration. Patient's blood and spinal fluid became negative. He has been out of hospital for five months.

Patient has had 12 injections of salvarsan and diarsenol since leaving hospital eight months ago. His blood serum has now become negative. No later examination of spinal fluid has been made. He has worked consistently since discharge as a carpenter.

3. Patient had transient paralysis and frequent minor seizures, also loss of sphincter control. Has ceased to have any more such manifestations. Works as a waiter when he can get work. Feels perfectly well, where formerly he suffered much from headaches.

4. Patient has had no convulsions since treatment. Has had in all 40 injections. Has been out of hospital for six months and working as a conductor on the Boston Elevated for three months.

5. Patient has made complete recovery mentally and serologically. At work as an inspector for Massachusetts Highway Commission.

6. Patient has been taking care of her home for nearly nine months now, and recently has given birth to a child.

7. Patient has been well and taking care of her home and four children for one and one-half years. Her blood serum remains negative to the Wassermann.

8. Although patient was never entirely incapacitated, he has shown a very marked improvement. Feels more capable; suffers no more from pains and headache and forgetfulness, as formerly.

9. This case of unquestionable cerebrospinal syphilis shows the difficulty of changing the spinal fluid from positive to negative. He had 13 injections of salvarsan and enormous quantities of mercury by injections, and potassium iodide, and although his mental condition became normal, the spinal fluid had not returned to normal when treatment was discontinued.

10. This case shows the good results that may be obtained in cerebrospinal syphilis by mercury and iodide, and illustrates that one may readily confuse cerebrospinal syphilis with general paresis, only to be set right by the therapeutic test (if one holds that general paresis is not favorably affected by mercury).

The following is a summary of these same cases on September 1, 1919:

1. The patient has been working in his former position as a salesman for a biscuit firm, making a large salary. He has done this work satisfactorily for four years since leaving the hospital and has received no treatment during this period. Physical examination August, 1919, shows no neurological disorders and his Wassermann reaction is negative in the blood

serum. His personality is entirely normal. He appears to be clinically recovered. And yet we feel convinced that anyone would have considered him a case of general paralysis of the insane in 1915 when admitted, from the history, mental picture, transient hemiplegia, and laboratory findings.

2. Patient continued to be capable and self-supporting for more than three years, at the end of which time it became necessary to recommit him. He received some thirty-five injections of salvarsan during this period. This was considered insufficient treatment in consideration of his spinal fluid findings, but it was not possiable to get better coöperation, due to patient working out of town. He is again under intensive treatment.

3. Patient has been out of the hospital for more than four years and apparently as well and efficient as before his commitment. He has worked and is self-supporting. Pupils are irregular and react sluggishly, there is a slight inequality of the tendon reflexes, the abdominal reflexes are absent. In March, 1919, the blood and spinal fluid were entirely negative. Treatment has been continued to the present time, though latterly in moderate amounts and infrequently.

4. Patient has been out of hospital and self-supporting for more than four years. He has never been as alert or efficient as before his symptoms began. However, he has not shown any progression of his disease. The physical signs are the same now as when he was discharged four years ago—sluggishly reacting pupils, absence of knee jerks and ankle jerks. He shows no other tabetic symptoms. Tremors are not present and he has had no more seizures. He has continued treatment faithfully, and has had more than 100 injections of salvarsan, a number of intraspinous injections as well as mercury and potassium iodide. The Wassermann reaction in the blood serum has remained positive. The last examination of his spinal fluid in March, 1919, gave the following: Wassermann reaction doubtful (weakly positive), globulin 0, albumin normal, cells 0 per cmm., gold sol, 1 2 2 2 3 3 3 4 0 0.

5. Patient remained quite well and continued his work from November, 1915, to February, 1917, when he had a seizure, following which he was very much confused, disoriented and amnestic. He was admitted to the hospital and his spinal fluid was positive to the Wassermann reaction, globulin ++, albumin ++, cells 26 per cmm., gold sol 1112211000. The Wassermann reaction of the blood serum was negative. After ten days' residence in hospital he was allowed home. He was somewhat improved and after a few days able to go back to his work. His efficiency was never up to normal, however, and in December, 1917, he was recommitted. He was treated but without satisfactory result and he died in January, 1919, following intraventricular injection. In this case, despite the negative serology obtained while under treatment (see chart), the spinal fluid findings became positive gain, and mental deterioration went on and the disease progressed. However, he was capable of self-support during a remission of two years' duration.

6. Patient remained in very good condition mentally and physically for two years, viz., April, 1915-April, 1917. During this period she received no treatment. In April, 1917, she became depressed and deluded and was returned to the hospital. Physical examination revealed tremors and lively tendon reflexes, but no definite pathological neurology. The Wassermann reaction was positive in blood and spinal fluid. The latter showed globulin +, albumin +, cells 3 per cmm., gold sol 5555443321. She remainend in hospital under intensive treatment for eleven months and was discharged in March, 1918. Her laboratory findings were essentially unchanged at this time, the Wassermann reaction of blood and spinal fluid being positive, globulin +, albumin +, cells 0 per cmm., gold sol 55455333000. Since this time patient has been taking care of her home. She is deteriorated, however, and not her former self. However, four years and eight months after her first admission she is able to care for herself at home.

7. It is now five and one-half years since patient left the hospital. During this time she has remained perfectly well mentally and physically. She has maintained the home efficiently for husband and children. Except for physical signs, which are as last reported, she appears normal. The blood Wassermann reaction has remained negative. She has had no further treatment and no lumbar puncture during this time.

8. After about twelve months, during which period patient was in very good condition, he had a spell of confusion. For the following six months, although able to hold his position,

Number.	Initials.	Hospital Number.	Diagnosis.	Age (Years).	Duration of Symptoms before Treatment.	Date of Initial Treatment.	Nature of Treatment.	Number of Injections of Salvarsan.
I	A. W.	Psychopathic Hospital 4517.	General paralysis.	46	1 month.	4–6–'15.	Salvarsan twice weekly. Potassium iodide. Occasional mercury.	28
II.	F. L.	Psychopathic Hospital 4161.	General paralysis.	30	3 months.	3–24–'15.	Salvarsan. Potassium iodide.	8
III.	M. K.	Psychopathic Hospital 4654.	General paralysis.	39	1 year.	4–28–'15.	Salvarsan. Mercury. Potassium iodide.	22
IV.	D. S.	Psychopathic Hospital 4484.	General paralysis.	27	8 months.	5–26–'15.	Salvarsan. Potassium iodide.	18
V.	P. W.	Psychopathic Hospital 5099.	General paralysis.	45	1½ years.	7–6–'15.	Salvarsan. Potassium iodide.	14
VI.	F. A.	Psychopathic Hospital 4098.	General paralysis.	37	5 months.	1–10–'15.	Salvarsan. Potassium iodide.	12
VII.	J. R.	Psychopathic Hospital 2251.	General paralysis.	35	2 weeks.	2–26–'14.	Salvarsan. Potassium iodide.	9
VIII.	J. A.	Psychopathic Hospital 5083.	General paralysis.	34	8 months.	7–8–'15.	Salvarsan. Potassium iodide.	12
IX.	A. S.	Psychopathic Hospital 5105.	Cerebrospinal syphilis.	28	9 months.	7–10–'15.	Salvarsan. Mercury. Potassium iodide.	13
X.	C. S.	Psychopathic Hospital 4508.	Cerebrospinal syphilis.	40	Unknown.	3–25–'15.	Mercury injections. Potassium iodide.	0

	AFTER TREATMENT.							
	Mental Condition.	Physical Condition.	TESTS.					
			W. R.		Globulin.	Albumin.	Cells.	Gold Sol.
			Blood.	Spinal Fluid.				
Number I.	Recovered.	Negative.	—	—	±	N	4	Negative.
" II.	Recovered.	Speech defect gone.	+	+	++++	++++	22	Paretic.
" III.	Markedly improved.	Hemiparesis recovered. Seizures cured. No Romberg or ataxia.	Doubtful.	Doubtful.	++	++	1	Negative
" IV.	Recovered.	No more convulsions. No tremor.	+	+	++	++		Negative.
" V.	Recovered.	Speech normal.	—	—	0	N		Negative.
" VI.	Recovered.		+	+	+++	++	6	Paretic.
" VII.	Recovered.	Stiff pupils. Knee jerks returned.	Doubtful.	Negative.	+	+	4	Negative.
" VIII.	Memory improved. Capable. Traveling salesman.	No change.	+					
" IX.	Recovered.	Left hemiplegia.	—	Doubtful.	+	+	20	Negative.
" X.	Recovered.		—	—	0	N	4	Negative.

BEFORE TREATMENT.

Mental Symptoms.	Physical Symptoms.	Tests.					
		W. R.					
		Blood.	Spinal Fluid.	Globulin.	Albumin.	Cells.	Gold Sol
Marked Excited Confused. Amnesia.	Tremors. Transient hemiplegia.	+	+	++++	++++	75	General paralysis
Marked. Confused (disoriented). Agitated.	Left pupil rigid, larger than right. Right reacts sluggishly. Speech defect. Reflexes very lively.	+	+	++++	++++	80	General paralysis
Marked. Apathy. Much deterioration.	Pupils react sluggishly. Left hemiparesis. Romberg, ataxia. Minor seizures.	+	+	++++	++++	80	General paralysis
Marked. Apathy. Deterioration.	Pupils react sluggishly. Knee jerks and ankle jerks absent Tremor, convulsions.	+	+	+++	+++	15	General paralysis
Apathetic. Deteriorated.	Pupils unequal. React sluggishly to light. Knee jerks absent. Speech defect.	+	+	++++	++++	48	General paralysis
Maniacal Expansive.	Negative.	+	+	++++	++++	130	General paralysis
Depressed. Agitated. Disoriented.	Stiff pupils. Knee jerks and ankle jerks absent.	+	+	+++	+++	26	
Slight amnesia. Irritability.	Speech defect. Sluggish pupils.	+	+	++++	++++	55	General paralysis
Semicomatose.	Left hemiplegia.	+	+	++++	++++	176	Cerebrospinal syphilis
Confused. Disoriented at times. Semistuporous. Agitated.	Pupils react sluggishly.	Doubtful.	+	++++	+++++	80	General Paralysis.

he was not so well. Then, suddenly, he had another attack of confusion and excitement He remained in the hospital about six months, until his death in the terminal state of paresis with contractures, emaciation, and bedsores. Very intensive treatment of salvarsan, iodide, intraspinous, and intraventricular injections brought no improvement either in his condition or laboratory findings. The latter were about the same as on admission. This case, while showing improvement for a year, cannot be considered as successful therapeutically.

9. Patient has a residual hemiplegia but is able to walk satisfactorily. Mentally he is entirely normal. An examination of his spinal fluid in March, 1919, showed it entirely negative. He can be considered recovered with defect. It is now more than four years since his hemiplegia and mental symptoms, and he has had no further attacks and is negative to the routine tests for syphilis. As far as one can judge, his syphilis is inactive.

10. Patient lost on leaving hospital.

SUMMARY.

A review four years or more after the dismissal from the hospital of ten cases of neurosyphilis who were reported as aided by antisyphilitic treatment is made. Nine of these patients were committed as insane, the remaining case was diagnosed general paralysis but not necessarily commitable. Eight cases were diagnosed general paralysis, two as cerebrospinal syphilis. It should be added that the diagnosis of cerebrospinal syphilis was changed from general paralysis on one of these two only because he cleared up under antispecific treatment. The mental symptoms were those of paresis. Of the eight cases diagnosed general paralysis, five are now living at home. Three are apparently entirely well, two while not well are able to care for themselves and live a normal life in the community. Two are dead and one is in a hospital. One of the two who died had a fair remission with economic efficiency for eighteen months and had all laboratory reactions negative at one time. The one who was in a hospital had a remission of three years' duration. Two cases were diagnosed cerebrospinal syphilis (non paretic), but with marked mental symptoms. One left hospital apparently entirely normal and with negative laboratory signs. He has been lost from view. The other is now serologically negative and mentally normal after four years.

Of eight cases diagnosed general paralysis, three are apparently entirely well after four years; two are well enough to live outside and care for themselves; one had remission of more than three years' duration, now in hospital; two are dead, having had remissions of eighteen months each.

Of two cases diagnosed cerebrospinal syphilis with mental symptoms, one is lost from observation, the other is mentally normal and serologically negative.

This report leads the author to feel that it is possible to help a portion of cases of general paralysis or cerebrospinal syphilis with mental symptoms and that intensive, systematic treatment will change the prognosis of general paralysis. It was not the intention to discuss the percentage of cases of general paralysis that could be helped when this report was first made in 1916, but it did represent a fair percentage of the cases that had had intensive treatment. At this time the desire is merely to bring this report up to date. It does seem encouraging, however, that the results have been so good for such a relatively long period. We conclude that the majority of cases of syphilis of the nervous system, whether the so-called cerebrospinal syphilis, tabes dorsalis, general paralysis or other forms, are entitled to treatment, and if this is done thoroughly, intensively and systematically the results will be gratifying. The form of treatment, mercury, iodide, arsenic intraspinous and intracranial injections, and the amounts will necessarily depend upon the condition of each individual patient.

THE POTENCY OF SOME FRENCH DIGITALIS PREPARATIONS

By Samuel A. Levine, M.D., Boston.

[From the Medical Clinic of the Peter Bent Brigham Hospital.]

At the request of Dr. W. S. Thayer and Dr. A. E. Cohn I was asked to determine the potency and the proper dosage of some of the digitalis preparations that were available for use in the American Expeditionary Forces in France. The work was done in the Central Medical Department Laboratory, Dijon, France, during July, 1918. Believing that some of the results might be of interest to clinicians in general, inasmuch as the French preparations that were tested are used in various medical centers in this country, the experimental data with regard to their potency are reported below.

The cat method was employed in this investigation because of the fact that cats most resemble human beings in their reaction to digitalis. Eggleston[1] made a study of several methods of standardizing digitalis, *i.e.*, using the frog, the rabbit, and the cat, and found that the latter gave the most satisfactory results. The cats were etherized and a cannula was inserted in the saphenous vein. The preparation to be tested was delivered through a burette and generally was made up in a strength so that not more than 10 cc. of the solution would be required to produce the lethal effect. The drug was administered in interrupted doses, sometimes every six minutes and other times every twelve minutes in such strength that death would result in 30 to 60 minutes. In a previous paper[2] it was shown that the M. L. D. (minimal lethal dose) is quite independent of the speed of administration and therefore it was not necessary to give the drug at a constant rate in the various experiments. In fact this was not practicable for the strength of the preparation was not known before the investigation was started, and the rate in certain instances had to be changed from time to time. In all instances of digitalis death the heart stops, while respirations continue for several minutes although they may be irregular and labored.

The first preparation tested was Arnaud's crystallized ouabaine. A similar preparation used in New York has been tested out by Hatcher and Brody[3] and it was found that the M. L. D. (minimal lethal dose) for cats was 0.0001 gram per kilo weight. In a recent work[2] this was found to be true and other observers as well agree with the above results. Four cats were given slow injections of Arnaud's ouabaine. The first cat (see protocols) received 0.00002 gram every six minutes and died after the sixth injection, the M. L. D. was 0.000053 gram per kilo. The second (wt. 2.0 kilo) received the same dose every six minutes and died three minutes after the fifth injection; M. L. D. in this instance was 0.00005 gram per kilo. The third (wt. 3.3 kilo) was given 0.00004 gram every six minutes and death followed one minute after the fifth injection. The M. L. D. was 0.00006 gram per kilo. The last cat (wt. 2.6 kilo) was given 0.00002 gram every six minutes and death followed after 0.00019 gram was given. In this instance the final injection was only 0.00001 gram as it was quite evident that death would ensue with this dose. The M. L. D. was 0.000073 gram. The average M. L. D. of the four experiments was 0,000059 gram. per kilo. (See Table I.) A definite discrepancy exists, therefore, between the potency of Arnaud's ouabaine used in France and the ouabaine used in New York, because the M. L. D. for cats of the latter is 0.0001 gram per kilo. This difference may be due to the fact that the New York preparation is crystallized strophanthin (gratus), and although I do not know the nature of the French preparation, it may be a crystalline substance derived from the ouabaine plant. In any event the French preparation is almost twice as potent as the one used in the United States and therefore should be employed in practical therapy in correspondingly smaller doses. Vaquez and Lutembacher[4] report nearly 2,000 intravenous administrations of Arnaud's ouabaine without any bad results. They used 0.00025 gram, not repeated during the first twenty-four hours.

The other French preparations tested were Nativelle's crystallized digitaline in sterile ampules in oil and in tablets. Four experiments were made, using the former, and it was found that the average M. L. D. was 0.00086 gram per kilo. This indicates that it is about one-eighth as potent as crystalline ouabaine used in New York and about one fourteenth as potent as Arnaud's ouabaine. For details of the individual experiments see protocols. The oil in which the digitaline was dissolved did not play any part in these experiments, although it was injected intravenously, because the following experiments using the same active principle, but suspended in salt solution, gave practically identical results. Three experiments were carried out, using Nativelle's tablets of crystallized digitaline. The average M. L. D. of this preparation was found to be 0.00072 gram per kilo. The tablets were not altogether soluble in salt solution but formed a fine suspension. Typical digitalis deaths were, however, obtained after the injection of amounts practically identical to those required when the digitaline was dissolved in oil.

To compare the above results with a more familiar digitalis preparation, a Parke, Davis Co. tincture of digitalis was tested.* This particular tincture was bottled September, 1916, twenty-two months previous to these experiments. Four cats were used and the average M. L. D. of this tincture was found to be 0.8 cc. per kilo or 0.08 gram of digitalis. This indicates a very active drug, for in testing out a good tincture of digitalis Hatcher[5] found that the M. L. D. for cats was 1.0 cc. or 0.1 gram per kilo of digitalis. A question came up as to whether the alcohol in the tincture played any part in causing the death of the animals. For this reason a control cat was given five times the volume of 47% alcohol (the strength of the tincture) intravenously in the same time without producing any toxic effect on the heart. The possibility of using the tincture of digitalis intravenously in human therapy immediately presents itself. Why this has not been in vogue in the past, I believe must be due to the fear of causing coagulation of the blood elements by using an alcoholic preparation. This point may be decided more definitely, and in addition the margin of safety (*i.e.*, the difference between the M. T. D., minimal toxic dose. and the M. L. D., minimal lethal dose) for such intravenous administrations will also have to be determined.

In comparing the M. L. D. of the various drugs (See Table I) we find that approximately 0.00006 gm. of ouabaine, 0.0008 gram of digitaline and 0.8 cc. tincture of digitalis are equivalents when given intravenously to cats. It is dangerous to translate these figures directly into similar ratios for human dosage. Exactly the same relationship need not exist in the dosage of these drugs when given in ordinary therapy, but the above figures are of some value in guiding us in the use of these drugs. The manufacturers of Nativelle's digitaline advise physicians to give 0.00025 mg. of digitaline four times a day when the drug is to be used in large doses and once a day when small doses are desired. Attention may be called to the fact that the dose of 0.00025 gram is one-fourteenth as potent as the same amount of ouabaine and is equivalent to 0.3 cc. of tincture of digitalis. It appears questionable, therefore, whether the doses of digitaline advised by the manufacturers are sufficient, even in view of the fact that digitaline may be absorbed more quickly than the tincture of digitalis when both are given by mouth. Furthermore, French digitaline is said by Clark[6] to be almost pure digitoxin; and the margin of safety in the use of digitoxin is generally thought to be quite small. Perhaps for this reason such small doses are employed.

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* Digitalin tablets put up by the Fraser tablet Co. of New York, were also tested and the average M. L. D. of three experiments was 0.0049 gram per kilo.

CONCLUSIONS.

1. The potency of Arnaud's ouabaine and Nativelle's crystallized digitaline was determined using the cat method of Hatcher and was compared with an active tincture of digitalis.

2. The M. L. D. (minimal lethal dose) of Arnaud's ouabaine was found to be 0.000059 gram per kilo.

3. The M. L. D. of Nativelle's crystallized digitaline was 0.00086 gram for the sterile oil ampules and 0.00071 gram for the tablets.

4. From these figures it is suggested that the dose 0.00025 gram of digitaline which the manufacturers advise using appears to be too small for good therapeutic results.

TABLE I.

DRUG	NUMBER OF EXPERIMENTS	M.L.D. IN GRAMS PER KILO. WEIGHT
Arnaud's Ouabaine	4	0.000059
Nativelle's Digitaline ampoules	4	0.00086
Nativelle's Digitaline tablets	3	0.00072
Parke Davis Co. Tincture of Digitalis	4	0.08*

* 0.8 c.c.

PROTOCOLS.

Arnaud's Ouabaine.

Exp. 1. Cat wt. = 2.3 kg. At 3.06 P.M. given 0.00002 gm. and this dose repeated every 6 min. Died 3.39. Total = 0.00012 gm. M.L.D. = 0.000053 gm. per kilo.

Exp. 2. Cat. wt. = 2.0 kg. At 5.12 P.M. given 0.00002 gm. and this dose repeated every 6 min. Died 5.39. Total = 0.00010 gm. M.L.D. = 0.000050 gm. per kilo.

Exp. 3. Cat wt. = 3.3 kg. At 3.25 P.M. given 0.00004 gm. and this dose repeated every 6 min. Died 3.50. Total = 0.00020 gm. M.L.D. = 0.000060 gm. per kilo.

Exp. 4. Cat wt. = 2.6 kg. At 4.00 P.M. given 0.00002 gm. and this dose repeated every 6 min. (last dose was 0.00001 gm.) Died 4.57. Total = 0.00019 gm. M.L.D. = 0.000073 gm. per kilo.

Digitaline, Nativelle's, in ampoules.

Exp. 5. Cat wt. = 2.8 kg. At 2.52 given 0.00035 gms., and this dose repeated every 12 min. Died 4.06. Total = 0.00245 gms. M.L.D. = 0.00088 gms. per kilo.

Exp. 6. Cat wt. = 2.5 kg. At 11.40 given 0.0004 gms., same dose repeated at 11.52 and 12.04, at 12.16 and every 6 min. thereafter 0.0002 gms. given until 12.46. Died 12.47. Total = 0.00024. M.D. = 0.00096 gms. per kilo.

Exp. 7. Cat wt. = 0.7 kg. At 3.15 given 0.0003 gms., at 3.33 and 3.45 given 0.00015 gms. Died 4.03. Total = 0.0006 gms. M.L.D. = 0.00086 gms. per kilo.

Exp. 8. Cat wt. = 0.7 kg. At 11.06 given 0.00009 gms., same dose at 11.18, then at 11.30, 11.42, 11.54, 12.00, 12.06 and 12.12 given 0.00006 gms. Died 12.20. Total = 0.00054. M.L.D. = 0.00074 gms. per kilo.

Digitaline, Nativelle's, in tablets.

Exp. 9. Cat wt. = 1.3 kg. At 11.50 given 0.00025 gm., same dose repeated at 11.56 and 12.02, then given 0.000125 gm. at 12.14. Died at 12.19. Total = 0.000875 gms. M.L.D. = 0.00067 gms. per kilo.

Exp. 10. Cat wt. = 1.3 kg. Given 0.00025 gms. at 4.20 and 4.26, then given 0.000125 every 12 min. Died 5.25. Total = 0.0010. M.L.D. = 0.00077 gms. per kilo.

Exp. 11. Cat wt. = 2.1 kg. Given 0.00025 gms. at 3.36, 3.42, 3.48 and 4.00, then given 0.000125 every 12 min. Died 5.53. Total = 0.0015. M.L.D. = 0.00071 gms. per kilo.

Tincture of Digitalis (Parke, Davis & Co.)

Exp. 12. Cat wt. = 0.95 kg. At 2.56 P.M. 0.5 c.c given, at 3.08, 0.3 c.c. given. Died 3.15. Total = 0.8 c.c. M.L.D. = 0.84 c.c. of tincture per kilo (equal to 0.084 gms. digitalis).

Exp. 13. Cat wt. = 1.4 kg. At 10.36 P.M. 0.3 c.c. given, same dose repeated at 10.48 and 11.00. Died at 11.07. Total = 0.9 c.c. M.L.D. = 0.64 c.c. per kilo. (equal to 0.064 gm. digitalis).

Exp. 14. Cat wt. = 0.95 kg. At 2.34 P.M. given 0.2 c.c., same dose repeated every 12 min. Died at 3.12. Total = 0.8 c.c. M.L.D. = 0.84 c.c. per kilo. (0084 gms. digitalis).

Exp. 15. Cat wt. = 0.80 kg. At 11.00 given 0.2 c.c., at 11.12 0.2 c.c., at 11.24 0.2 c.c., 11.40, 0.1 c.c. Died at 11.45. Total = 0.7 c.c. M.L.D. = 0.88 c.c. per kilo. (0.088 gms. digitalis).

REFERENCES.

[1] Eggleston, C.: Biological Standardization of the Digitalis Bodies by the Cat Method of Hatcher. Am. Jour. Pharm, March, 1913.

[2] Levine, S. A.: The Action of Strophanthin on the Living Cat's Heart. Jour. Exp. Med., 1919, Vol. xxix, 485.

[3] Hatcher, R. A., and Brody, J. G.: A Biological Standardization of Drugs. Am. Jour. Pharm., 1910, Vol. lxxxii, p. 360.

[4] Vaquez and Lutembacher: Bull. de l'Acad. de Méd., 1917, Vol. lxxvii, p. 405.

[5] Hatcher, R. A.: The Persistence of Action of Digitalins. Arch. Int. Med., 1912, Vol. x, p. 268.

[6] Clark, A. J. The Standardization of Cardiac Tonics. Brit. Med. Jour., 1912, No. 2, p. 687.

HYSTERIA.

BY DAVID NATHAN, M.D., NORRISTOWN, PA.,
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THE war has brought vividly to the notice of many of the profesion the prevalence of this disease not only affecting the so-called hysterical women but men who have passed as immune, and whose cure was as rapid and surprising to themselves as it was miraculous to the laity.

Babinski has defined hysteria as a pathological condition shown by disorders which may be exactly reproduced by suggestion in certain individuals or can be made to vanish by persuasion. What seems to me to be an apt definition is that of Hurst, *viz.*, "Hysteria is a condition in which symptoms are present which have been produced by suggestion and are curable by psychotherapy." These definitions at least cover the most important points which have been agreed upon by neurologists. The hysteria of the past with its various stigmata, is like the neurasthenia of Beard, of historical value only, this latter representing a condition of fatigue or exhaustion from overwork, and here some form of Weir Mitchell treatment for a short time is about the only use this latter treatment has for the honest neurologist of the present. There are no constant physical or mental stigmata. Stigmata are never present unless produced by suggestion (Examination, etc.), Babinski. No patient with hysterical anaesthesia ever complained of anaesthesia. The perimeter will produce any spiral you look for. The mental symptom here involved is that of suggestibility. Anybody may be a subject of suggestibility—some are abnormally suggestible. Every symptom has a physical basis at first, later on its perpetuation is hysterical, *e.g.*, shell shock. The non-recognition or cure of such symptoms suggests perpetuation (hysteria). If a month elapses after gassing and the patient is not cured, for rarely is aphonia due to gross organic lesion of the vocal cords produced by gassing, hysterical perpetuation is suggested. Blepharospasm, vomiting, deafness, etc., are produced by auto- and hetero-suggestion. One sees orthopedic cases with rigid-hand after wounds — condition here is partly reflex and partly voluntary. In many of these cases massage and electric treatment produce perpetuation by hetero-suggestion. The idea of incapacity being rubbed into the hand. The lesion gets well but the symptom remains. In some cases one finds an hysterical exaggeration of beginning organic disease. There are often the physical signs of organic central nervous disease evidenced before symptoms are produced. (One must distinguish emotional states from hysteria, *e.g.*, hebetude, trembling, tachycardia, micturition, etc.)

The rôle played by emotion in the productions of hysteria can be neglected. At the front one rarely saw hysteria. At the base hospitals and among those who had been from hospital to hospital was it most frequent. In war cases as opposed to civil ones, there was an absence of deeply underlying mental processes—mental confusion, violent emotion, etc., following the commotion and moral shocks of war but prepare the ground for auto- and hetero-suggestion, manifested by the later appearance of hysterical phenomena.

At the Scale Hayne Hospital, England, where I was for a time, on command, the cases were sent from the various general, special, and convalescent hospitals, within the various commands in England. Many of the cases were brought in on stretchers and most had been manipulated, massaged, electrified, bathed in minerals and given up as permanently disabled. They consisted of hysterical contractures and paralysis following wounds and injuries besides many cases of hysterical aphonia. The arms and legs were the parts most often involved—injury due to gun shot wounds with or without fracture, amputation, tetanus, contusions, dislocations, etc.

In a series of one hundred consecutive cases which Lt.-Col. A. F. Hurst, the officer commanding, tabulated, not including the cases of aphonia, there had been an average period of treatment of eleven months before admission. Of the series, ninety-six were cured at one sitting. Average time required fifty-four minutes.

One was cured in four days.
One was cured in four weeks.
Two were cured in eight weeks.

Of sixty-seven consecutive cases of aphonia following gassing, emotion, laryngitis, bronchitis, wounds of neck and chest, and debility, with an average period of treatment before admission of 205 days, maximum 35 months, minimum two weeks.

37 were cured within 5 minutes;
21 were cured within ½ hour;
9 required more than half an hour.

We never looked for stigmata and by looking produce them, but assured the patient of the nature of his trouble, explained it and promised him a cure. We rarely had recourse to hypnotism. Confidence by the physician in himself which must square with his knowledge of the condition along with the faith of the patient in the physician, favorable entourage (patient seeing and hearing of cures in other patients) hasten a cure. But it is possible to cure most hysteries whether they have faith in you or not and in spite of their voluntary effort in some cases, not to be cured. In some cases after removal of the hysterical element there was the original basis in the form of organic nervous disease, *e.g.*, disseminated sclerosis.

Hysteria will come into its own when the physician recognizes its capability of imitating all organic nervous disorders, when he realizes the ease with which he can cure the condition if wholly hysterical, or can remove the hysterical symptoms which are added to those due to organic nervous disease and which may comprise 50% of total symptoms.

ACUTE NEPHRITIS BY ABSORPTION OF HOUSEHOLD DISINFECTANTS.*

BY HENRY A. JONES, M.D., HOWARD, R. I.,

Superintendent, State Infirmary, Howard, R. I.

CASE A. B. Age 28, white, single; occupation, mill operative. Strong and healthy up to date of injury November, 1918, when he accidentally shot himself in the right foot with a 22 calibre rifle. His physician prescribed a wet dressing of creolin. The patient was instructed to use it often to keep the wound clean. After the wound was healed, the patient became a convert to the efficacy of this preparation, using it daily in his bath, also in the mill for the frequent washing of his hands during his work, from above date to Aug. 23, 1919, when he received a sting, from a wasp, near the ankle. This small area became infected, and by abrasion of the shoe the infection increased, deep suppuration occurred, and a large sloughing ulcer resulted. This condition was aggravated by a concentrated solution of creolin being applied by some one of the family, who, becoming alarmed at this condition, called a physician, who prescribed lysol. The patient was instructed to soak the foot twice a day in a solution made by adding one tablespoonful to enough water to cover the ulcer well. This soaking of the foot usually lasted from 15 to 20 minutes, and the ulcer was kept wet with this solution. A relative of the patient supplemented this treatment by soaking a cloth in the preparation, without diluting, and applying it around the ulcer. After the foot was taken out of the solution where it had been soaked, it was usually very white and somewhat numb, a condition which was due to the action of the preparation on the nerve terminals of the skin. This condition would gradually disappear after a good brisk rubbing. During this treatment of the ulcer, and within a comparatively short period of time, the patient began to present symptoms of nephritis. The feet became swollen, the eyelids puffed, the urine became "bloody," lassitude with loss of appetite, then finally physical prostration occurred. A sample of "bloody" urine showed a port wine color, medicated odor, no albumen by nitric acid or boiling test, a few casts, no sugar, a faintly acid reaction with a specific gravity of 1018.

After examination of the history of the case, the patient being too prostrated to travel for consultation, a diagnosis was made of acute nephritis caused by absorption of the products used for wet dressings; we advised their discontinuance. In the middle of September the condition of the patient became worse. He was sent to a general hospital where a diagnosis of "acute nephritis" was made.

On October 2, 1919, the physician on the case presented for our examination a sample of the patient's urine. The specific gravity was 1010, acid reaction, pale lemonade in color with a faint pink tinge as seen through reflected light; it also contained a very few casts and a faintly perceptible ring of albumen. The patient has been taken home from the hospital, is improving rapidly under a bland diet and urinary antiseptics, and abstinence from disinfectants as a dressing for the ulceration.

COMMENT.

We believe this case to be of great interest inasmuch as it shows the result of too energetic treatment of broken tissues by strong disinfectant wet dressings. Solutions containing coal tar products should be made by being first thoroughly dissolved in cold water, then adding warm water enough to bring to the desired dilution, which should be "a very pale milk color." If this method is not followed, but the solution is first mixed with hot water, there is a tendency for the oily constituents to separate and float upon the surface as oily bubbles and scum, which causes an irritation at the point of contact with the skin. Such cases are frequently found in the hands of inexperienced persons who have allowed a patient to sit too long in an improperly mixed disinfectant bath, for the relief of eczema, chronic ulcers of the legs, scabies, and vagabonds' disease; indeed, some of the latter cases exhibiting a condition similar to surgical shock, when immersed too long in a strong solution of these very useful, but much abused household disinfectants.

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* After this article had been sent to the publishers, an article bearing upon the destructive action of Lysol on the tissues, by Horace K. Sowles, M.D., appeared in the BOSTON MEDICAL AND SURGICAL JOURNAL, Vol. clxxxi, No. 17, p. 510.

The case also shows the folly of prescribing, and leaving such solutions in the hands of the patients or relatives, who are altogether too apt to increase rather than diminish the dose prescribed. They should be firmly impressed with the possibilities of injury, both locally and systemically, whenever they depart from written directions.

While writing this article numerous incidents have been brought to our attention by physicians, of grave injuries resulting from the long continued use of commonly used disinfectants, such as carbolic acid, iodoform, and iodine, the dermatitis resulting from these being very severe and the absorption noted by their appearance in the urine. Our attention has been called to incidents occurring during the days of "Listerism," when the carbolic acid spray was freely used during operations, one noted local surgeon being afflicted with strangury and "bloody" urine the same afternoon after operating under the fumes of this drug and dying of nephritis later on. He always maintained his condition was due to the effects of the carbolic fumes at this particular operation, during which, in conjunction with the spray, a hot strong solution was used to sterilize the instruments, the fumes from this being perceptibly noticed, and affected others standing close by the operator.

The condition of nephritis in the subject of this article may have been hastened by the absorption by the lungs of the fumes created by dissolving the disinfectant in the pail of hot water used to soak the foot.

The case is interesting also to show that we should never lose sight of a very important fact, that baffling physical conditions are apt to arise in a case due to absorption of any drug frequently prescribed, too long continued and apparently overlooked by the attending physician.

Bibliography.

Hare: Practical Diagnosis. p. 405.
Hare: Practical Therapeutics, p. 398.
Purdy: Practical Urinalysis and Urinary Diagnosis.
Emerson: Legal Medicine and Toxicology, p. 303.
Experience of local surgeons.

Book Reviews.

Psychiatric-Neurologic Examination Methods. By Dr. August Wimmer. Translated by Andrew W. Hoisholt, M.D. St. Louis: C. V. Mosby Company. 1919.

In making psychiatric-neurologic examinations, this volume will be found to be a useful and practical guide both by students and by physicians. The author has presented in a concise, outline form the fundamental features, including general symptomatology, to be taken into consideration in making a thorough examination of the insane. The condition of the patient before his present illness may be determined by following the anamnesis schedule herein suggested, involving questions of heredity, the patient's general bodily development during childhood and later, his mental habits and general psychic development. The author considers it wise to determine the psychic state of the patient before undertaking the somatic condition, and suggests methods by which this may be accomplished: observation of the patient's mood, and his behavior reaction as shown in mimicry, gesture, and speech are helpful external elements in judging the patient's condition; a questionnaire is suggested for discovering the patient's fundamental psychic disturbances; the course of ideas, the degree of attention and apprehension, the relation of the individual to his environment, his sense-deception, his delusions and obsessions, and the quality of his memory may all be ascertained by various questions and tests which are outlined in this book. The author suggests methods for determining the patient's somatic state, and describes the importance of the following factors: external habitus, internal organs, organs of sense, speech, motor disturbances, muscular movements and reflexes, examination of the cerebrospinal fluid, and serologic examination. This volume is illustrated, and should prove to be helpful to physicians and especially to the student in psychiatry in connection with his work in mental clinics.

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THE MEDICAL FACULTY OF THE UNIVERSITY OF PARIS.

In consideration of the fact that the Medical Faculty of Paris has been reorganized and has resumed its courses of instruction and reopened its clinics and laboratories, it may be of interest to members of the profession in this country to know of the resources at the command of this institution. We have received recently a pamphlet, *La Faculté de Médecine de l'Université de Paris,* which describes the present scope and policy of this school of medicine.

The Faculty of Medicine has been developing over a long period of time; the first step, in fact, was taken in the reign of Charlemagne, although there was no definite organization until 1270. The Faculty was then at first made a part of the University and was under the control of ecclesiastical authority. Professors and students were subject to the sway of the churchmen and were often persuaded to abandon medicine for a more sacred calling. Later, a separation was made, but the influence of the clergy persisted, and it was not until 1452 that physicians were free enough from religious influence to be permitted even to marry. At first established in *la rue du Fouarre,* the Medical Faculty moved, after some time, to more comfortable quarters in *la rue de la Bucherie* in 1456. In the second half of the 16th century, a rival institution, *le Collège de Saint-Come,* attained a position of considerable importance. In the eighteenth century, the organization of *l'Académie de Chirurgie* increased greatly the importance of surgery in France. In 1792, the legislative assembly abolished these corporations and for two years the Faculty of Medicine ceased to exist. In 1794 the *École de Santé* was organized and installed in the buildings which had been used by the *Collège de Chirurgie,* the same which are used by the Faculty of Medicine at the present time. There was organized a department which aimed to be both theoretical and practical, a library and museum were created, clinical services were established in the hospitals, and the modern era was thus begun in France. In 1808 this organization was called the *Faculté de Médecine.* It has developed to such an extent since that time that it is now necessary to add an annex in order to make it possible to extend its activities. Plans are being made to construct two new buildings, one for the department of medical biology, and the other for the department of hygiene.

Clinical instruction has been organized in 35 of the hospitals and almshouses in Paris. With one exception, these belong to the Department of Public Aid, which organizes open meetings for all students of medicine, whatever their nationality; this liberality makes it possible for a large number of foreigners to serve as internes in Paris hospitals. The course requires that for five consecutive years students pass the morning and part of the afternoon in hospital service, being permitted not only to ask questions but also to take part in the examination of the patients. Consultations are held every morning for the externes under the direction of a hospital physician. Under the guidance of a laboratory chief, autopsies are performed by the students of the hospital service. This custom, contrary to that practised in most countries, has the advantage of enabling the student to follow the complete course of the disease and to verify the diagnosis made of the case.

There are twenty clinical services of the Faculty, including medical clinics, therapeutic, general surgical, obstetric, and special medical and surgical clinics. There is also a department of free instruction, to which all physicians, surgeons, and specialists are invited; this arrangement is of recent origin, and has the advantage of permitting thorough coöperation between the Faculty and the hospitals and of grouping the schedules and programs under a single administration.

The theoretical courses, often illustrated by practical demonstrations, are held in various amphitheatres and laboratories of the Faculty by professors and their associates. Students are not obliged to be present in these theoretical courses, but they are required to follow the practical work, admission to which is free and is limited to undergraduates. For advanced students, there have been organized courses to enable French and foreign physicians to follow the course of modern progress in medical science. These courses have been suspended during the war, but were reorganized to begin again in November, 1919. In many of the services, lectures are given in foreign languages. Laboratories of research, with the advice of the professors and their assistants, are open to undergraduates approved by the professors upon the payment of a small fee.

The Faculty of Medicine admit each year between four and five hundred new students, many of whom are from other countries. At the end of the course of five years, students are required to submit a thesis and to pass three examinations, one in clinical and therapeutic surgery, a second in clinical and therapeutic obstetrics, and a third in clinical and therapeutic medicine.

Foreigners who wish to receive the state diploma of medicine must meet all the requirements of the French students. Those who cannot fulfill all those requirements may be eligible for the diploma of *Docteur en Médecine de l'Université de Paris.* A complete list of the courses of study and examinations is included in the pamphlet *La Faculté de Médecine de l'Université de Paris,* published by Masson et Cie, 120 Boulevard Saint-Germain, Paris, VI^e.

PERSONAL SAFETY OF PHYSICIANS.

The attack made recently upon a physician in Lynn has called forth a protest against the present situation, in which no measures are taken to protect the personal safety of physicians. It is indeed true that members of the medical profession, called upon to render service at all times of night, are particularly exposed to attack from assailants. If the number of physicians who have suffered at the hands of nightly marauders were to be ascertained, it is likely that the list might be considerable. In our cities and in many towns, physicians usually leave their cars in public garages during the winter because they are heated; not infrequently these garages are located in dark and secluded places, particularly favorable to the schemes of evil doers. And yet, physicians are not permitted by law to carry firearms as a means of defense. Though the protectors of health and lives of others, we must hazard our own personal safety and continue to submit ourselves, unarmed, as prey to whatever criminals may choose to take advantage of the midnight call.

A PHYSICIAN'S RESPONSIBILITY.

Greatly to the detriment of medical progress and the well-being of humanity, the point to which a physician is responsible to his patient is often overreached. We refer to the mischievous practice of bringing suit against physicians and surgeons in the hope of financial gain. There are errors and accidents beyond the control of the best of surgeons, and unless sufficient legislation is enacted for their protection, the fact that patients are taking advantage of these opportunities with increasing avidity cannot fail to result in reluctance on the part of physicians and surgeons to expose themselves to the risk incumbent upon undertaking much work which is necessary to prevent suffering and death. No one would wish to deny that physicians and surgeons properly may be held for errors or blunders for which they personally are responsible; but a case which has come to the writer's attention recently illustrates the unjustness and annoyance to which a doctor may be exposed. A dog, jealously suspicious of a new-born baby, sprang at it fiercely. At considerable personal risk to himself, the physician jumped to the rescue of the child and fought with his hands the strong, maddened animal. After a considerable struggle he finally succeeded in mortally injuring the dog and saving the baby's life, although not without considerable mutilation to himself. He was sued by the family for the death of the dog.

Similar incidents, and others of a more strictly professional nature, constantly confront the physician and surgeon. Should we not have adequate legal protection against attacks of this sort? There is pending at present legislation to relieve the doctor of responsibilities which justly do not belong to him and over which he has no control. It is our earnest belief that such legislation not only will protect members of the medical profession, but also it will make them more free to undertake the service which the interest and welfare of humanity demands that they should undertake without hesitation.

PRACTICAL AID TO THE HEALTH CAMPAIGN.

From time to time there are introduced into Congress measures having for their object the improvement of the public health. Most of these measures call for vast appropriations which quite naturally the national legislators are loath to enact. There are, however, many ways in which the national government can assist the local health officials without expenditure of any considerable sum of money.

The basis of any effective public health campaign is knowledge of the health of the community in question. Exact knowledge of the local conditions is difficult to obtain and the health official must content himself with tables of births and deaths supplemented by reports of communicable diseases. To a large extent the diagnosis of these diseases is dependent upon laboratory examinations which in most cases must be made at the central state laboratory. The national government could easily provide for the expense of sending the specimens to the laboratory and the return of the report and the laboratory supplies. To be sure this could not be done for nothing; but by extending the franking privilege to the central state laboratory in each state, the state would be saved considerable and the national government would be in a position to make sure that the laboratories are kept up to the standard.

MEDICAL NOTES.

Red Cross Preparedness for Disaster.—*The Red Cross Bulletin* for December 22 announces the plans of the newly created Red Cross Bureau of Disaster Preparedness and Organization, which has undertaken to mobilize the resources of community, state, and nation for immediate relief in the event of disasters. For the use of division offices there has been issued a "Disaster Relief Guide Book," which is helpful in planning disaster surveys and in mastering methods of relief developed as the result of Red Cross experience in past disasters. Up to the present it has been customary to wait until a disaster occurs before undertaking to provide relief; but the record of an average of one disaster a month for every month of fourteen years shows how important it is to be prepared to meet such frequent emergencies. It is hoped that through surveys made by the Red Cross the fifteen thousand communities in which it is active will know thoroughly the resources at their command and will provide means for putting them into immediate use whenever they are needed.

Important Facts about Diphtheria.—The United States Public Health Service has issued under the title, "Keep Well Series," a number of popular health booklets which contain considerable valuable information. One of these, Number 4, discusses diphtheria and describes means of identifying the disease, methods of treatment, including antitoxin, the method of testing for it by the Schick reaction, and means of maintaining personal and bedside hygiene. The fact is emphasized that diphtheria need seldom become a serious disease if it is treated properly and in time. Safety lies in early administration of antitoxin and this has been proved by mortality figures. Formerly the regular rate of death of children stricken with the disease was one out of every three, while today, with the use of antitoxin, ninety-eight out of every hundred children will recover. Delay is the source of the greatest danger.

Public Health Activities.—Among the activities of the Public Health Service, the inspection of animals and meat is one of the most important means of preventing disease. More than seventy million animals and their products, representing about seventy per cent. of the total meat production in the United States, have been inspected by the Federal service under the direction of the Bureau of Animal Industry. This work included the inspection of the animals before and at the time of slaughter; the re-inspection of products throughout all the various processes of preparing, curing, canning, and packing; the enforcement of requirements to insure sanitary conditions, equipment, and methods; the exclusion of harmful preservatives; the supervision of labelling so as to prevent false representations; and the condemnation and destruction for food purposes of all animals or products found to be unwholesome. In addition, approximately one hundred and eighty-one million pounds of foreign meat have been inspected for entry into the United States. The cost of inspection is less than six cents for each animal slaughtered.

Rockefeller Gift of $100,000,000.—It has been announced that Mr. John D. Rockefeller has given recently the sum of $100,000,000 for the promotion of education and science. This gift is the largest philanthropic single gift recorded in the history of the world. At a meeting of the General Education Board to be held on February 26, plans for the distribution of this gift will be considered.

The sum of $50,000,000 will be disbursed, both principal and interest, in coöperating with institutions of higher learning in increasing the salaries of their teaching staff. In connection with this gift, Mr. Rockefeller is reported to have made the following statement:

"The attention of the American public has recently been drawn to the urgent and immediate necessity of providing more adequate salaries to members of the teaching profession. It is of the highest importance that those entrusted with the education of youth and the increase of knowledge should not be led to abandon their calling by reason of financial pressure or to cling to it amid discouragements due to financial limitations. It is of equal importance to our future welfare and progress that able and aspiring young men and women should not for similar reasons be deterred from devoting their lives to teaching.

"While this gift is made for the general corporate purposes of the board, I should cordially indorse a decision to use the principal as well as the income as promptly and largely as may seem wise for the purpose of coöperating with the higher institutions of learning in raising sums specifically devoted to the increase of teachers' salaries."

The other $50,000,000 will be used by the Rockefeller Foundation for promoting the well-being of mankind throughout the world. Of this sum, $5,000,000 is to be expended for the development and improvement of the leading medical schools of Canada, which are to be required to raise additional sums from other sources. The remainder will be used in extending public health activities and medical education throughout the world.

Tuberculosis in Italy.—The latest official statistics received from Italy show that the total mortality from tuberculosis in that country has decreased from 1887 to 1914, but in varying degrees in different regions. In Sardinia, however, the rate has increased. The report states that the diminution was about one-third from all tuberculous diseases and one-fifth for pulmonary tuberculosis.

Influenza Epidemic in Japan.—Reports received in Tokio from different parts of Japan state that there is an outbreak of influenza in that country. It is reported that the Government has taken measures to check the spread of the disease.

Leper House for Brazil.—There has been begun near Santo Angelo a model leper house, equipped with all necessary provisions for the isolation and treatment of patients in Brazil.

Washington University School of Medicine.—The sum of $150,000 has been granted by the General Education Board to the Washington University School of Medicine, St. Louis, on condition that an equal amount is raised by subscription. The total sum is to be applied to the endowment of the department of pharmacology.

ADMISSION OF WOMEN TO MEDICAL SCHOOL.—There are enrolled in the Medical College of New York University, for the first time in its history, the names of twenty women who are permitted to have equal privileges with the men, attending the same classes, working in the same laboratories and clinics and receiving their degrees after they have completed the same curriculum of study. Heretofore, men students only have been admitted to attend the clinic at the Bellevue Hospital and assist the attending physicians with the lesser duties of the dispensaries; henceforth, women students will also be admitted to the same privileges.

PRICE CHANGES IN DRUGS AND CHEMICALS.—The following announcement was made by the Drug and Chemical Markets for the week of Dec. 24:

Manufacturers of American colors announce production sold far ahead into 1920. Some dyes are becoming scarce, owing to difficulty in obtaining certain intermediates. Among the coal-tar crudes benzol and toluol are practically off the market.

Soya bean oil has been advanced in price by the activities of speculators. Linseed oil is in good demand and prices are firm, owing to the short crop of flaxseed.

Prices of essential oils are firm, and business continues active. The reduction of stocks, in conjunction with the numerous orders received, tends to advance prices. Manufacturers have named higher figures on several products, but there are few revisions of note.

Iodine prices have been reduced by manufacturers. Sulphur cocaine, and glycerine are higher. There is an extreme scarcity of borax, oxalic acid, wood alcohol, formaldehyde and thymol. Trading is active, and the approach of the holidays does not lessen inquiries. Transactions are limited to small lots, because of the limited stocks.

Sulphuric acid—66 degree—is higher. Bichromate of soda and bichromate of potash are lower. Caustic soda prices are very firm. All potash salts are scarce.

RADIUM ORE IN ONTARIO.—Pitchblende, the ore of radium, has been discovered in Butt, District of Nipissing, Ontario. The uranium content has been found to be 6.6 per cent. equal to 74.98 per cent. of uranium oxide. This is the second occurrence of radium-bearing mineral reported to the Bureau of Mines since the Ontario Legislature offered a reward of $25,000 for the discovery of radium in Ontario in commercial quantity. The other discovery, euxenite, which also carries radium, was made several years ago in the township of South Sherbrooke in Lanark. As it has not been shown that radium exists in commercial quantities, the reward has not been granted.

GIFT TO THE FAIRVIEW HOSPITAL.—By the terms of the will of the late William Hall Walker, the sum of twenty-five thousand dollars has been bequeathed to the Fairview Hospital at Great Barrington, New York.

WESTERN RESERVE UNIVERSITY MEDICAL SCHOOL.—Plans are being made to establish a post-graduate school in medicine in Western Reserve University, Cleveland, Ohio, in order to offer opportunities for further study to practising physicians who desire to acquaint themselves with current medical and surgical investigation. The course is being arranged by a committee of three members of the faculty of the school of medicine, and will begin next June. There will be short, intensive courses without degrees, and also a longer course which will lead to the degree of A.M. in medicine. The latter course is designed especially for regular students who may wish to continue their study before taking up their practice.

A HEALTH SURVEY OF OKLAHOMA CITY.—A survey of the health situation in Oklahoma City, undertaken on the initiative of the Oklahoma Tuberculosis Association about a year ago, has just been completed. The report reveals sanitary conditions which call for remedy in a number of respects. In regard to the water supply, the fact that the general nature of the natural streams is hard and the salt marshes through which they run give them a brackish taste, has resulted in the extensive consumption of well water sold in bottles. No physical examination of the men who handle the supplies is made regularly, the processes of sterilization of the bottles and the corks is inadequate, and there is no ordinance which brings these waters under the inspection of the health department.

The survey of the food conditions of Oklahoma City discloses facts which probably hold true in a great many cities. The scoring of the dairies showed that one-third are below 60. Pasteurization is only partial and there are no regulations concerning the examination of food handlers. In restaurants particularly the conditions were found to be unsanitary. Soap, running water, and individual towels are provided in only three out of seventy-four establishments inspected; only four had provision for the storage of clothing outside the room where food is prepared, and only six had adequate storage for street clothing. More than half the refrigerators were found to be clean; two-thirds of the establishments used scalding water for dishes; only eight had proper garbage receptacles, and only one establishment required medical cards of its employees.

The mortality rate of Oklahoma City in 1918 was 12.7 per thousand, but this figure is higher than usual because of the influenza epidemic. The birth rate is very low. Typhoid fever is reported as quite as high as in registration cities; pneumonia is in general at only half the normal rate; malaria is four to five times as prevalent; diphtheria is a fraction only of the usual number, and scarlet fever and measles are hardly perceptible.

Standardization of Tuberculosis Sanatoria.—A report of a committee of the Mississippi Valley Conference at Des Moines outlines the standard requirements of tuberculosis sanatoria and makes a number of important recommendations. The committee believes that the controlling board of the institution should be composed of three or five members, at least one of whom should be a licensed physician, who should not be connected with the county board or other agencies. The buildings should be away from the congestion of the city, yet accessible by trolley and convenient to city water, sewer system, gas, electric light, and telephone, and in a place free from cemeteries and certain industrial occupations. The committee recommends that bed patients be housed in two-story, fire-proof buildings, and that ambulants be put in units of sixteen in one-story buildings. Canvas construction is not considered favorably. One-fifth of the capacity of the institution should be arranged especially for the use of those who are acutely ill, while thirty per cent. of the space should be available for other cases not so far advanced but at the same time not ambulatory. It should be possible to provide separately for the open and closed cases among children. It is advised that every institution, irrespective of size, have rooms for the physical examination of patients, especially for nose and throat conditions, a laboratory, and if possible, an x-ray equipment, especially if there is a capacity of one hundred or more beds. Tuberculous patients should be provided with recreation and social rooms, and facilities for outdoor amusements.

BOSTON AND MASSACHUSETTS.

Week's Death Rate in Boston.—During the week ending Dec. 27, 1919, the number of deaths reported was 221 against 441 last year, with a rate of 14.47 against 29.32 last year.

The number of cases of principal reportable diseases were: Diphtheria, 72; scarlet fever, 66; measles, 212; whooping cough, 33; tuberculosis, 30.

Included in the above were the following cases of non-residents: Diphtheria, 11; scarlet fever, 10; tuberculosis, 2.

Total deaths from these diseases were: Diphtheria, 3; scarlet fever, 2; measles, 1; whooping cough, 3; tuberculosis, 19.

Included in the above were the following non-residents: Diphtheria, 1; scarlet fever, 1.

Influenza cases, 4.

Medical Commission for Dr. R. B. Scales.—Dr. Robert B. Scales of Dorchester, Massachusetts, has received a commission as lieutenant-colonel in the medical section of the Officers' Reserve Corps of the United States Army. Dr. Scales served during the war as chief of the medical service in Base Hospital 106. Nearly fifty thousand sick and wounded American soldiers were cared for in the hospital center of which Base Hospital 106 was a part.

Honor for Two Boston Physicians.—In recognition of their distinguished services during the war, two Boston surgeons, Dr. Joel E. Goldthwait and Dr. Frederic A. Washburn, were honored by the Prince of Wales during his visit to this country by being made Companions of the Order of St. Michael and St. George.

Provisional Reappointment of Dr. Patrick H. Mullowney.—It has been announced that Dr. Patrick H. Mullowney has been reinstated provisionally as Deputy Health Commissioner, in charge of the food inspection division. Dr. Mullowney was removed from office on January 31, 1919, after he had left this city without leave to engage in war activities in connection with federal food inspection for the army. On September 9, 1918, he requested a leave of absence, which was refused by Health Commissioner Woodward because of readjustments which were being contemplated for the health department at that time. Dr. Mullowney's reappointment is only provisional and he must take examinations with the other candidates for the permanent appointment. If some other man on the civil service list proves himself to be better qualified for the position, he will be given the benefit of the probationary appointment.

Tuberculosis in Boston.—The Boston Association for the Relief and Control of Tuberculosis has issued statistics to emphasize the seriousness of the tuberculosis problem in Boston. Last year there were in Boston 1,367 deaths from this preventable disease. Careful investigation shows that for each death from tuberculosis there are twenty persons ill with the disease, nine of whom are in the advanced or contagious stage. These figures indicate that in Boston we have over 27,000 persons with tuberculosis, over 12,000 of whom are in the advanced or contagious stage.

Reward for Capture of Lynn Bandits.—At a meeting of the physicians of Lynn, it was voted to offer a reward of one thousand dollars for the arrest and conviction of the motor bandits who assaulted Dr. Bennett of that city on Christmas Eve.

Wellesley's Public Health Organization.—Six or seven years ago there was instituted in Wellesley the novel plan of the coöperation of a number of towns in the establishment of a communal board of health. Three or four of the nearby towns joined with Wellesley in securing the full-time health officer of skill and experience and in establishing proper laboratories and health systems. It has been found that in this way communicable diseases, food inspection and other functions of a health department are better managed by trained specialists who are paid salaries which call for their whole time than by the local part-time men who were employed formerly. The principle initiated in Wellesley has proved so satisfactory that there are being organized throughout the country other coöperative systems, including, in addition to community public health organizations, district hospitals and sanatoria and systems of dispensary work.

NEW ENGLAND NOTES.

New England War Relief Funds.—The principal New England war relief funds have reached the following amounts:

French Orphanage Fund	$533,575.25
Italian Fund	318,034.25

Public Health Nurses in Connecticut.—Connecticut is the seventh state in the Union in the actual number of nurses employed, and aspires to a still higher station. The state has one hundred and seventy-five nurses, and it is believed that it needs three hundred and fifty. New Haven County has seventy-nine, Hartford County has thirty-five, and Fairfield County has twenty-four. There are thirty-seven for the rest of the State. The average for the State is about one nurse for every eighty-five hundred of population.

Miscellany.

HOW GERMANY CARES FOR HER DISABLED.

It is natural that Germany, with her admitted power of organization, should have exhibited a concentration of effort in making provision for her wounded and disabled in the war. On the other hand, just as we were unprepared for the war, when war came, so no organized arrangements existed for dealing with these emergencies, at least upon a scale which could have been anticipated. Much has been accomplished since in this regard, however, and it speaks well for the energy and spirit of the nation that our wounded and disabled men are now in a fair way to profiting from the success achieved in our efforts to meet their demands. Hospitals had to be organized, medical services arranged, systems of transport created, and a mass of detail crushed into an effective method for realizing essential results. All these were matters of extreme urgency, demanding immediate and intensive organization, delay in the execution of which would have led to deplorable chaos.

"As soon as, however, the pressure of this urgency began to diminish, then time and opportunity became available for turning attention to the great aftermath of the war, the question of making provision for our soldiers permanently disabled by their wounds, and herein has Germany displayed her organising capacity in full measure. In an interesting and instructive volume Major John R. McDill has described in detail the systematic methods adopted for the relief of the German wounded, under State control.*

The first step was a coöperative basis of working between the military and civic authorities. This ensured that directly a permanently disabled man entered a hospital his prospects of becoming a useful civilian were impressed upon him. A conspiracy of effort among doctors, nurses, visitors is fully exploited as part of the necessary scheme for encouraging the man's "will-power" to resume an active industrial life. In furtherance of this a special department has been introduced, for vocational guidance, embracing experts, representative of industrial and other occupations, to which the men are recommended to apply for advice. But with the progress of the war adding to the magnitude of the undertaking, an elaborate scheme was formulated: this is now known as "The Welfare Commission for the War Disabled," and it is based upon a union of purpose of the military and civil authorities, in association with all trade and industrial organizations, and the coöperation of the polytechnic and commercial schools. The objects of this commission are carried out by committees in each province, and by subcommittees in local districts. In the manner in which this all-pervading organization is portrayed before us by Major McDill, doubt cannot be felt that in the possibilities of its effectiveness it surpasses our own efforts in this direction. In warfare we have learned lessons from the Germans; in warfare the Germans have learned lessons from us, and now it is open to us to consider whether the details of the elaborate scheme in Germany, by which disabled men can be brought back into a sphere of usefulness for the State, is not worthy of our attention. Germany claims that 95 per cent. of her wounded are able to return to military duty, or are fitted for useful employment in some industrial pursuit. The evidence shows that every effort is being made by our enemies to perfect the means of converting man into a unit of usefulness under the circumstances; therefore, it would be foolishness on our part to ignore the methods of organization and the practical schemes by which Germany attains her object in this regard, wherever it became obvious that benefit could result from her example in this country. The book in question throws many sidelights upon the war as affecting our enemies, while the facts it discloses are authoritative."

Correspondence.

SCHOOL NURSES AND BOARDS OF HEALTH.

State Department of Health,
Boston, January 2, 1920.

Mr. Editor:—

I notice that in the issue of the Boston Medical and Surgical Journal for December 18, 1919, there is an editorial on the proposed health education law. I beg to call your attention to the paragraph under "Bill 2. Suggested Draft for School Nurses." Here you quote only part of the law as it would stand if this amendment were passed. The intention of this amendment is merely to make obligatory school nursing service for every city and town. There is no intention of changing the existing law in any other way. For that reason Section 1 should read: "The school committee of every city and town of the Commonwealth shall appoint one or more school physicians and nurses and shall assign one of each to each public school within its city or town, and shall provide them with all proper facilities for the performance of their duties as prescribed in this act; and shall assign one or more physicians to perform the duties of examining the children who apply for health certificates in accordance with this act: provided, however, that in cities where the board of health is already maintaining or shall hereafter maintain substantially such medical inspection as this act requires, the board of health shall appoint and assign the school physician and school nurse.

It will readily be seen that this proposed amendment to the present law does not take away from boards of health any of the rights which they now possess.

Very truly yours,
Merrill Champion,
Director, Division of Hygiene.

SOCIETY NOTICES.

Hampshire District Medical Society.—A special meeting of the Society will be held at Boyden's restaurant, Northampton, on Wednesday, January 14, 1920, at 11.30 A.M.

Dr. Frederick Bryant of Worcester will give a lecture on "Radium and Malignancy, or The Cancer Problem." This will be a lantern lecture, illustrated by 60 slides. Dr. Bryant will also have a tube of radium and demonstrate its flames. It is hoped that all members will endeavor to hear this discourse and witness the demonstrations.

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* "Lessons from the Enemy: How Germany Cares for Her War Disabled." By John R. McDill, M.D., F.A.C.S., Major, Medical Reserve Corps, U. S. Army. Illustrated. Philadelphia and New York: Lea and Febiger. 1918. Reviewed in the *Medical Press and Circular.*

E. E. THOMAS, M.D, *Secretary.*

BOSTON MEDICAL LIBRARY in conjunction with the SUFFOLK DISTRICT MEDICAL SOCIETY will hold a general meeting in John Ware Hall, Wednesday, Jan. 14, 1920, at 8.15 P.M. "Some Vital Problems in the Diagnosis and Treatment of Cancer" will be discussed by Dr. Francis Carter Wood, Director of Cancer Research for the George Crocker Special Research Fund, and Professor of Pathology of the College of Physicians and Surgeons, Columbia University, New York. The address will be illustrated by the stereopticon.

W. B. ROBBINS,
F. A. PEMBERTON,
G. D. CUTLER.
Committee on Medical and Social Meetings for the Boston Medical Library.

THE EAST BOSTON MEDICAL SOCIETY will hold its annual dinner and election of officers on Thursday, January 15, at 6 P.M., at Young's Hotel, Boston.

J. DANFORTH TAYLOR, M.D., *Secretary.*

THE NEW ENGLAND WOMEN'S MEDICAL SOCIETY will hold its annual meeting at the Hotel Thorndike on Saturday, January 17 (note change from regular date).

Business meeting at 6 P.M.; dinner at 6.30 P.M. A charge of $1.25 will be made for the dinner (half of its actual cost). Guests may be invited on payment of the whole cost of $2.50.

Dr. Alice Hamilton will be the guest of honor.

Please notify Dr. Emily A. Pratt, 483 Beacon Street (B. B. 8000) of your intention to be present, not later than noon, January 16.

ALICE H. BIGELOW, M.D., *Secretary.*

THE MASSACHUSETTS THERAPEUTIC MASSAGE ASSOCIATION.—The next meeting will be held at the Hotel Brunswick, Venetian Room, at 7.45 P.M., on Tuesday, January 20, 1920. Trustees meet at 7.30.

Dr. E. G. Cutler, Professor Emeritus of Clinical Medicine at Harvard Medical School, and Mr. Thomas Burns of Dr. Caines' Institute for Exercise will address the Society on "The Uses of Water in Health and Disease, Inside and Out."

Members of the medical profession are invited.

DOUGLAS GRAHAM, *President,*
AGNES J. KERR, *Secretary.*

HARVARD MEDICAL SOCIETY.—The next meeting will be held in the Peter Bent Brigham Hospital amphitheatre (Van Dyke Street entrance) Tuesday evening, January 20, at 8.15 P.M.

Program: Osler memorial meeting: Dr. W. T. Councilman, Dr. Harvey Cushing, Dr. J. H. Pratt, Dr. E. C. Streeter. Medical students and physicians are cordially invited to attend.

ELLIOTT C. CUTLER, *Secretary.*

MASSACHUSETTS GENERAL HOSPITAL.—On January 22, 1920, at 12 noon, the Out-Patient Medical Society will hold its first clinical meeting. The program is as follows:

1. Practical Modern Teaching in Heart Disease.
   Dr. Paul D. White.
2. Errors and Shortcomings in Diagnosis.
   Dr. Richard Miller.

F. A. WASHBURN, *Resident Physician.*

AMERICAN CONGRESS ON INTERNAL MEDICINE.—The American Congress on Internal Medicine, in conjunction with the American College of Physicians, will meet at Chicago on February 23 to 28, 1920.

The sessions will comprise daily clinical and laboratory demonstrations in many of Chicago's leading hospitals and teaching institutions. There will be several evening gatherings. These will be addressed by men eminent in American medicine. One of the evening meetings will embrace the Fourth Annual Convocation of the American College of Physicians.

Ethical physicians of the United States and Canada who are interested in the advancement of what is best in clinical and scientific medicine and its affiliated sciences are cordially invited to attend all sessions of the American Congress on Internal Medicine. The gatherings will be of great practical and scientific worth.

Detailed information with regard to headquarters, hotels, clinics, and scientific demonstrations may be secured by addressing Dr. Frank Smithies, Secretary-General, 1002 North Dearborn Street, Chicago, Illinois.

RECENT DEATHS.

DR. CHARLES W. PILLSBURY of Saco, Maine, died recently in his sixty-ninth year. He attended Bowdoin and Dartmouth colleges, and had practised in Saco for 45 years.

DR. WILLIAM G. BISSELL died on November 14 at the age of 49 years. Dr. Bissell had been director of the laboratories of the Buffalo Health Department for 25 years, and was at one time president of the New York State Sanitary Officers' Association. He had practised in Buffalo since his graduation from the University of Buffalo in 1892.

DR. XAVIER OSWALD WERDER died recently at his home in Pittsburgh. He was born in Switzerland in 1857. Dr. Werder received his education in schools and colleges of Pittsburgh, Maryland, New York, and in several foreign countries. He was one of the founders of the American College of Surgeons, and was well known as a surgeon and writer of medical literature.

DR. CHARLES S. WIGHT died recently at his home, Marlborough, Mass., at the age of 63. He was born at West Bethel, Maine. Dr. Wight received the degree of M.D. from the University of Tennessee and practiced medicine in Chattanooga for 17 years, later serving in the Worcester hospitals, at Berlin, N. H. He is survived by his widow and a sister, Mrs. Payson Grover of West Pepperell.

DR. ROBERT LEE RANDOLPH, son of the late Bishop Alfred Magill Randolph of Fredericksburg, Va., died recently. Dr. Randolph was a graduate of the Medical University of Maryland. He studied in Vienna, and was at one time an assistant in ophthalmology in the Royal Polyclinic in Vienna. At the time of his death, Dr. Randolph was an associate professor of clinical ophthalmology in the Medical School of Johns Hopkins University.

SIR WILLIAM OSLER died on December 29, at Oxford, England, after an illness of several months, at the age of seventy years. Dr. Osler was born at Bondhead, Ontario, Canada, on July 12, 1849. He received his early education at Trinity School, at Trinity College, and at Toronto University in Toronto. He later attended McGill University in Montreal and studied at University College, London, and at Berlin and Vienna. Dr. Osler then returned to Canada and for ten years was professor of the Institutes of Medicine at McGill University. At the end of that period, in 1884, he became professor of clinical medicine in the University of Pennsylvania. Five years later he went to Johns Hopkins University as professor of medicine, remaining there until 1904 when he went to England to serve as regius professor of medicine. In 1892 Dr. Osler married the widow of Dr. S. W Gross of Philadelphia, who was Miss Grace Revere of Canton, Massachusetts, who survives him. His only son was killed in action in 1917.

The Boston Medical and Surgical Journal

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PROSTATISM.*

BY EDWARD L. KEYES, JR., M.D., NEW YORK.

PROSTATISM is the best word I know to express that condition which results from obstruction to urination at the bladder neck due to adenomatous or sclerotic changes in the glands of the prostate itself, or of the posterior urethra. This description may seem unduly complex to you, but there is even today no absolute and general agreement as to the precise nature and origin of the so-called prostatic hypertrophy or sclerosis which are the two causes of prostatism. Prostatic adenoma, commonly known as hypertrophy, is an adenomatous change affecting various groups of glands about the bladder neck, some of them part of the prostate proper, and some of them small glands lying along the posterior urethra. As a result the prostate enlarges, protruding somewhat toward the rectum, but chiefly toward the bladder into which it projects, generally speaking, in the form of lateral or so-called median lobes or all together as a sort of horse-collar enlargement. The urethra is thus lengthened and distorted, so that the effort to pass water closes the urethra instead of opening it. Hence the retention, acute or chronic, complete or incomplete, which is the basis of the disease.

The same phenomena of retention result from prostatic sclerosis. The sclerotic prostate may or may not also show adenomatous changes. It is usually but slightly enlarged, it is characteristically a rigid scarred prostate. This condition is appreciated when the surgeon performs a suprapubic section, and introduces his finger into the posterior urethra for the purpose of enucleating the adenomatous portions of the gland. The finger may not enter the posterior urethra at all without tearing this which has been changed into a sclerotic ring. Once in the urethra the mucous membrane tears with considerable difficulty, and the finger finds great difficulty in identifying any plane for the enucleation of lateral or median lobes.

This sclerotic prostatitis may occur at any age after adult life has been reached. I have seen it in men in the twenties, though it is commonest between the ages of 50 and 65. This sclerotic process may result from antecedent gonorrhea of considerable severity, or from bladder stone, or its cause may not appear. The effort to associate adenomatous prostatism with gonorrhea has completely failed. Cabot and I have independently made observations which show that patients with stricture of the urethra are singularly free in their later lives from the symptoms and signs of adenoma of the prostate. Young has noted the rarity of this condition in Catholic priests, and its frequency in married men. I have been struck by these same facts, but beyond this the etiology of prostatism is open for discussion. Adenoma of the prostate, be it said, shows itself to the pathologist at about the fifth decade of life, but usually does not cause symptoms which persuade the victim to consult a physician until some twenty years later, usually when he is about sixty-five years of age.

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* Read at a meeting of the Surgical Section of the Suffolk District Medical Society, Nov. 21, 1919.

Let us assume a working knowledge of the symptoms of prostatism and of the pathological processes which it implies, processes of dilatation and secondary infection of the bladder, the ureters and the kidneys. And let us turn our attention at once to some high lights in the diagnosis of this condition.

Retention of urine in the absence of grave ureteral stricture or of such obvious conditions as abscess in the prostate, stone in the urethra or periurethritis may be due to a number of causes. Let us enumerate them in order of frequency:

1. Adenoma of the prostate.
2. Carcinoma of the prostate.
3. Tabes.
4. Sclerosis of the prostate.
5. Diverticulum of the bladder.
6. Tumor or stone of the bladder.
7. Prostatic stone.

The differential diagnosis between these various conditions is by no means always easy, though sometimes it is obvious enough. Yet it is always confused by the fact that several among them may exist together. Any specialist will recall cases in which adenoma of the prostate has been associated with carcinoma, with tabes, with prostatic stone, with bladder stone, diverticulum or tumor. Thus the differential diagnosis implies, not only the proof that one of these conditions does exist, but that all of the others do or do not exist. So complete a diagnosis is perhaps not always essential to the general practitioner; it certainly is to the specialist.

In the first place one must define retention of urine. This is usually described as a condition in which at least 50 c.c of urine may be drawn from the bladder by catheter immediately after the patient urinates. Such a definition will suffice in general, but there are a number of functional conditions, notably the diurnal polyuria familiarly but incorrectly labelled hysterical, and the nocturnal polyuria which is often an indication of deficient vitality in a person suffering from chronic nephritis or arterio-sclerosis. There are a number of such polyuric conditions which are not infrequently met with in middle life, and which give symptoms resembling those of prostatism. But their cause is an iscreased production of urine, not a retention. Let such a patient urinate, then talk with him a few minutes while he is removing his coat, then catheterize him and you may get as much as 200 c.c. from the bladder though the lower urinary organs are actually quite normal and this great quantity of urine has been manufactured within a short time. Let it be understood, therefore, that a single observation of a small amount of residual urine does not establish the diagnosis of prostatism unless supported by many other data.

To enumerate all of the differentiating points between the several conditions that cause or simulate prostatism would but confuse you. Let us rather touch upon the more striking features of each.

Prostatic Adenoma. Prostatic adenoma causes the symptoms of prostatism which bring a patient to consult a physician when he is over fifty-five and not more than seventy years of age. Examination reveals retention of urine and rectal touch usually discloses a bilateral symmetrical enlargement of the prostate in all of its dimensions. Exceptionally the adenoma is at the bladder neck and the prostate feels normal by rectal touch. If a sound or cystoscope is introduced into the urethra this will be felt plainly through the apex of the prostate, while the base of the prostate forms more or less of a mass between the finger in the rectum and the instrument. Inspection of the prostate through the cystoscope reveals a bulging within the bladder quite comparable to the bulging felt by rectum. The demarkation between the lobes is identified by deep clefts in the bladder neck for which Young has devised an ingenious chart. The extent of projection into the bladder is estimated by the degree to which the trigone is obscured.

Carcinoma of the Prostate. Carcinoma of the prostate presents a wholly different picture, most confusing to the inexperienced practitioner. It occurs both earlier and later in life than adenoma, and is the commonest cause of retention of urine beginning in men over seventy. The prostate feels only very slightly irregular in some cases, suggesting ancient gonorrheal infection. But almost always there are areas of hardness in the gland, extending upward around the seminal vesicles, and if felt upon a metal instrument in the urethra this hardness is found to cross the median line at the apex of the gland in sharp contrast to the condition found in adenoma. The cystoscope shows a bladder neck that is irregularly thickened and edematous and possibly ulcerated or showing papillary carcinoma. The most confusing element in the diagnosis is the fact that carcinoma and adenoma may exist together though beginning in different parts of the gland, for it is to be remembered that Geraghty has shown that carcinoma does not begin in portions of the gland which have become adenomatous.

On the other hand, a very large proportion of prostatic carcinomata give as their first symptom something other than urinary disturbance, such as an enlarged gland in the left side of the neck, sciatica (bilateral sciatica is said to be pathognomonic to the prostatic carcinoma) or secondary tumors in bone or lumbar glands. Prostatic carcinoma is often overlooked through failure to make a rectal examination. It may be confused with prostatic stone (see below).

Tabes. Bladder paralysis is not infrequently an early sign of tabes. I have several times seen it in patients whose only other physical sign of the disease was a loss of ankle jerk, and of deep muscle sensibility. These tabetics can often hold their water very well. They show much less vesical irritability than do the prostatics as a class, and by the same token they usually do well on catheter life. The maximum incidence is between the ages of forty and sixty. The prostate is normal, though it may be pronounced enlarged if palpated while the bladder is still full of urine. The trabeculation of bladder wall and laxity of sphincter said to be characteristic of the tabetic bladder are not to be depended upon as diagnostic signs.

Sclerosis of the Prostate. Sclerosis of the prostate is to be distinguished from paralysis of the bladder with considerable difficulty in some instances. The sclerotic prostate is often not enlarged, it does not project in any characteristic manner into the bladder, indeed the prostate of a tabetic may be sclerotic. Therefore before operating upon such a case blood and spinal fluids should be carefully investigated for the various syphilitic reactions.

Diverticulum of the Bladder. Diverticulum of the bladder is usually congenital, often associated with some sclerosis of the prostate, usually gives symptoms of retention of urine before the forty-fifth year, may be associated with any of the above conditions and is diagnosed by those who look for it with the cystoscope, or by cystography (radiography of the bladder filled with a fluid opaque to the rays).

Bladder Tumor. Bladder tumor may cause retention due to clots, or to the tumor itself blocking the urethral orifice. It is more likely to be mistaken for prostatic carcinoma than for adenoma.

Stone in the Bladder. Stone in the bladder is not an uncommon cause of prostatic sclerosis and certain cases of recurrent bladder stone are curable only by relief of the prostatic retention even though the amount of urine retained be less than 100 c.c.

Prostatic Stone. Prostatic stone is one of the most elusive of the prostatic conditions causing retention of urine. Most cases of prostatic stone show no symptoms whatever. A fair number have a certain bladder irritability. Prostatic sclerosis may result and cause retention. Three times I have seen prostatic stone that by rectal touch gave an irregular hardness of the prostate absolutely characteristic of carcinoma. But the stones are formed chiefly in the line of cleavage about the lateral lobes and the distinguishing feature between carcinoma and stone in the prostate is that stone causes no thickening of the apex. Fortunately the x-ray always discloses prostatic calculi since these are made up largely of calcium salts.

TREATMENT OF PROSTATISM.

The two real problems in the treatment of prostatism are when to operate, and how to operate.

When to Operate. The prolonged preparation of the patient for operation upon the prostate and the prolonged and careful after-treatment constitute an orderly systematized medical procedure. But the operation itself remains a blind, bloody, brutal, blundering performance,—an emergency operation, if ever there was one. Such being the case, it is small wonder that a very large proportion of physicians and public still look askance upon the operation, and refuse to submit to its dangers. A patient so minded will seek medical aid only when his painful and frequent urination becomes an unbearable agony, or when his urethra shuts up entirely. He then asks for the catheter, and not for operation and is delighted to carry away this novel toilet article rather than to submit himself to the vicissitudes and dangers of operation.

We should not blame him. He is nearing three score and ten, an age at which the preservation of life is not worth much suffering, and if he can manage to slip comfortably downhill in a gradually increasing renal deficiency, or to be snuffed out by an acute focal renal infection he is certainly better off than some of his friends who have been left with suprapubic fistulae or incontinence of urine, though they may outlive him many a year.

Naturally the urologist dissents, and perhaps he exhibits a very moving series of cases to support his contention that prostatectomy is the sole guaranty of eternal life, both physical and sexual. The cunningest way to reach this conclusion is to divide your operative procedure into two parts, kill off all the feeble patients with the first operation, and then brag about the results of the second one.

As a matter of fact, it is probably still the case, as has often been alleged, that in a cross section of the community the general surgeon or practitioner will promptly dispose of about forty or fifty per cent. of the operable prostatics who seek his assistance, while the specialist will reduce this immediate mortality to about ten per cent.

This is not to say that the specialist does the operation any better than the general practitioner. I think I could teach a qualified general surgeon everything I know about the operation of prostatectomy in one brief lesson. A properly prepared prostatic should never die of prostatectomy (I make the statement rather roughly). But some will die in the course of even the best of preparation. Others will die because of improper preparation, and many will die because of the fantastic improvements that the surgeon introduces into his operation.

But the pleasure of hitting out at the general surgeon is distracting my attention from the subject I wish to discuss. When should the prostatic be operated upon? The answer, of course, is that he should be operated upon just as soon as he shows symptoms of prostatism. When we get patients at that stage of the disease in sufficient numbers we shall be able to develop an operative technic which shall be a little more decent and cleanly than that we now employ. And we shall be able to save these patients' lives in more than ninety per cent. of cases, and not leave them with irreparably damaged kidneys.

What type of operation should we employ? I can best answer this question by distinguishing three types of cases:

1. The frankly adenomatous type with involvement of all the lobe.
2. The adenomatous type with partial involvement, one of the lateral lobes being apparently not enlarged, or with complicating sclerosis, so that one may question whether the obstruction is due to the sclerosis or to the enlargement of the lateral lobes.
3. The frankly sclerotic prostate and the adenomatous bar due to enlargement of Albarran's glands.

The frankly adenomatous prostate is, I believe curable by the ordinary suprapubic prostatectomy on condition that the mucous membrane of the bladder neck is spared at the superior commissure, and that the fistula is left at a point as distant as possible from the bladder neck. We spare the mucosa so as to prevent postoperative stricture of the bladder neck. We place the fistula high so as to encourage its early closure.*

I did my first prostatectomy on a case of this type in 1898. I have yet to see a recurrence, though this operation does not cure pyonephrosis, renal or bladder calculus, or bladder diverticulum or tumor.

The intermediate class of cases that we may call partial hypertrophy or adenomato-sclerotic cases must be operated upon according to the same principle. If, for example, one of the lateral lobes seems not to be enlarged the finger must nevertheless be introduced into the urethra, the mucosa torn open over this lobe and such fragments of it as can be enucleated should be torn away. The procedure may seem very futile at the time, but if it is not carried out the patient is doomed to a relapse. Under the best circumstances he will be relieved of his symptoms from four to ten years and then they will recur, due to the adenomatous enlargement of the lobe which was not enucleated.

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* I have no intention of interrupting our evening with discussion of the best methods of operating or of preparing the patient for operation.

I have apparently permanently relieved the retention of a number of cases of the adenomato-sclerotic type, by removing absurdly small fragments of the lateral lobes—lobes which did not project into the bladder and whose adenomatous condition could only be appreciated either by the urethroscope or by the finger introduced into the prostatic urethra through the suprapubic wound. The presence of sclerosis, however, makes one fear that these cases will relapse after a certain number of years have gone by.

The problem of the frankly sclerotic prostate is with us still. Bottini, Chetwood, Young, Goldschmidt, Bugbee and Buerger have devised various types of operation, any of which will temporarily relieve a certain proportion of cases.

The most brilliant example of the failure of these procedures that I have encountered is the following case. The patient came to me having had a Buerger operation performed for an obstruction at the bladder neck, which I understand was a small median lobe. This operation did not relieve the chronic complete destruction to urination from which he suffered. He entered Bellevue Hospital last spring, and I performed a suprapubic operation upon him and discovered the bladder neck to be very tightly strictured. I tore open this stricture, and enuclated two very slightly enlarged and sclerotic lateral lobes. This left him with a retention of about 200 c.c. and an open suprapubic fistula. I used the Young punch upon him twice, obtaining no results the first time, and a reduction of his residual urine to 100 c.c. the second time, but within six weeks it had returned to 200 c.c I then did a Bottini operation upon him (the only one, by the way, that I have performed), and his fistula closed, and his residual urine dropped to about 30 c.c. when he urinates sitting down; but if he attempts to urinate standing up he still has 200 c.c. residual urine. In this condition he has remained for five months, and the amount of his residual urine will doubtless increase.

Fortunately, not every sclerotic prostate behaves quite as badly as this. Slight enlargement of Albarran's glands and sclerotic prostates may be successfully operated upon by the Young punch, and the author of this operation has reported cases that remained well for a number of years. I have reported equally satisfactory results from the Chetwood operation, but only two of my cases have remained well for ten years. One, a purely sclerotic prostate, is apparently well twelve years after operation; the other has now a very large adenomatous prostate, but empties his bladder completely although his operation was performed in 1905. Such accidents may happen.

What, then, is the best operation for the sclerotic prostate, the contracted bladder neck, the slight enlargement of Albarran's glands? To this question I do not know a universal answer. One of my patients remains well twelve years after a tearing open of his bladder neck, thanks to an occasional treatment with the Kollmann dilator. Another died recently of renal calculus, an attempt at suprapubic prostatectomy having been made upon him by myself and by another surgeon. Neither of these operations did him the least good. The residual urine of about 150 c.c., which he had when he came to me six years ago, and which was the occasion of his bladder and kidney stones, remained unchanged by the two operations. At postmortem I was shocked to find that his bladder showed no diverticula and the prostatic orifice was so wide open that the tip of the little finger could be introduced into it scarcely touching its sides, yet his residuum had been undiminished.

Dr. Squier has recently suggested that for such cases the proper operation may be the total removal of the prostate, dividing the urethra at the bladder neck and at the membranous urethra and sewing the two together. In two or three cases his immediate results following such an operation appear to have been excellent.

It seems a pity to close one's remarks in such a pessimistic strain. We can but cheer ourselves with the hope that the next generation of surgeons will succeed where we have failed.

DIFFICULTIES IN THE DIAGNOSIS OF MENINGITIS.

By Harold W. Dana, M.D., Boston,
First Assistant Visiting Physician, Boston City Hospital.

It is not claimed that the cases included in this paper prove any theory, nor that they add any new facts to the means of diagnosis. Taken simply as interesting cases demonstrating some particular sources of error in the diagnosis of meningitis, possibly they may be of value.

Probably we are all more or less familiar with the meningismus which children are prone to show under a variety of conditions. While it is probable that many of these cases, not due to meningitis might by definition be called examples of "meningismus," none of these patients could properly be said to have a meningismus as I understand the term.

Elsewhere I have reported a series of cases of pyelitis,[1] in which, from the presence of tenderness and rigidity of the neck, and in some instances, in which the Kernig sign was also present, the existence of a meningitis was strongly suspected. Pyelitis is therefore one of the conditions to be considered in making a diagnosis of meningitis; in fact, this is, I believe, a most treacherous possibility of error, which I will not elaborate further here.

Recently there has been much discussion as to what constitutes a serous meningitis, so called, and how one is to distinguish such a "meningitis" from a non-paralytic form of poliomyelitis. A case in which I took great interest along the above line, is recorded as Case 1. This boy, when he first entered the hospital, was semicomatose, in tremendous pain, and crying out from headache. He had a high fever, with marked retraction and rigidity of neck, and seemed to be in an extremely critical condition. A lumbar puncture was done at once. When I saw the boy 24 hours later, he was sitting up eating a hearty breakfast. He had in his spinal fluid a cell count of 300 cubic mm. Since the boy got well practically from one spinal puncture, and since we then did not know much about non-paralytic poliomyelitis, his entrance diagnosis of tuberculous meningitis was changed to a discharge diagnosis of "serous meningitis." Later, when every one was discussing poliomyelitis, I felt that my boy with the serous meningitis and the high spinal cell count must really have been a case of poliomyelitis without signs of paralysis. Recently, however, I followed up the case, and discovered that the boy actually died of tuberculous meningitis a few weeks after leaving hospital. I suppose that if we had put more stress on this high cell count and on the large predominance of lymphocytes in this fluid, I might have avoided this error in diagnosis; yet it seemed impossible to stick to the admission diagnosis when we had watched the patient for two weeks, during which time he had been perfectly well.

Case 2 exhibits a condition with which I fancy that orthopedic men are more familiar than are internists. The patient was a poor little child in a plaster jacket with all the symptoms of a tuberculous meningitis. That was the diagnosis which I made, and the same diagnosis was made by a pediatrist who saw the child in consultation. We both felt that the child might be more comfortable without her plaster jacket. When we consulted an orthopedist as to this, he stated that removal of the plaster often relieved the symptoms of a meningitis. So it proved in this case. The case cleared up immediately when the plaster was cut, relieving pressure over the kyphos. Here again I do not know what the condition of the spinal cord and meninges was,—whether there was a backing up of more or less infected spinal fluid through the pressure of the plaster upon the tuberculous lesion, or whether carious bone was pressing upon the cord. It would seem as if bone pressure would have given signs of a transverse myelitis rather than of a tuberculous meningitis. Is it possible in such a case to have a non-tuberculous condition of the spinal fluid sufficiently acute to give rise to such a serious condition in the patient? It does not seem so; and in this case, because of the plaster and the Pott's disease, we did not do a lumbar puncture, so we never had any definite evidence on this point. I do know, however, that this child was perfectly well except for her caries of spine, for months afterwards, without any later signs of any further meningitis.

Another patient (Case 3) who twice came under my care as an interne in hospital, and who was also primarily suffering from caries of the spine, dying finally of a meningo-myelitis, is of interest chiefly as showing how much better hindsight is than foresight, and as an example of the tendency, when one cannot find a cause for the pain, to consider the patient's complaints imaginary or neurotic. This patient, a negro, was admitted and treated, on his first stay in hospital, which lasted for a month, as a case of influenza. He had vague pains all over his abdomen, particularly in the region of his bladder. After repeated examinations, which revealed no cause for his complaints, he was sent home. Nine days later he returned to us at night, moribund, and with a paraplegia and dysphagia. Autopsy showed a necrotic lumbar spine, with a double psoas abscess, and a beginning purulent meningitis.

In passing. I might mention the infrequency with which a Pott's disease is diagnosed or even suspected, in an adult.

Case 4 entered hospital with symptoms and signs only of a severe septic sore throat. The medical service and the consultant from the aural service, first considered that there was a probable syphilitic lesion of the throat. Later as the swelling in the throat increased, we believed that we were dealing with a retropharyngeal abscess, but since the mass which protruded into the pharynx was extremely hard, and actually bony in nature, we finally concluded that this must be a bony new growth, probably originating from the cervical spine. When definite rigidity and tenderness of the neck, combined with a double Kernig sign, proved the presence of a meningitis, and lumbar puncture gave a cloudy fluid, we still felt that this condition was in addition to the new growth in the throat. At autopsy, to our great surprise, only a pneumococcus meningitis was to be found,—the bony mass in the throat being due merely to the prominence of the bodies of the vertebrae, pushed forward by the very marked and sharply localized retraction of the neck. While this does not seem possible, on paper, yet both the medical and laryngological services were deceived in this respect up to the very end.

The case which is reported as number five is of less diagnostic importance in that the condition was unusual. the patient having a cerebral tumor and probably an acromegaly. He did, however, after some days in the hospital, develop rigidity and tenderness of the neck, and a well marked Babinski sign on one side. In combination with a temperature which was at times considerably elevated, and the fact that his spinal fluid was shown by lumbar puncture to be under slight pressure, the exclusion of a diagnosis of meningitis was not possible for more than a week.

The histories of these cases follow:

Case 1. E. M. N. 15 years old. Single. Schoolboy. Admitted August 19, 1916. *F. H.*—Mother and father, four sisters, two brothers, all living and well. No tuberculosis in family. *P. H.*—Measles as a child. No malaria, pneumonia, typhoid, or rheumatic fever. *P. I.*—For two weeks headache and vomiting. Vomiting came on right after eating. Vomitus contained only food, no blood. Dull pain in abdomen, not localized. Previously well. No cough, dyspnoea, or pain on breathing. No nocturia or polyuria. Has lost some weight, amount unknown. Best weight, 140 pounds.

P. E.—Well developed and nourished. Stuporous and irrational. Responds very slowly to questions, answers not reliable. Much prostrated. Not cyanotic nor dyspnoeic. Pupils dilated, equal, react slowly to light and distance. Mouth: Teeth fair, tongue thick, yellowish-white coat. Throat: No exudate or oedema. No general glandular enlargement. Neck: Moderate rigidity and tenderness on bending. Lungs: Good resonance throughout, breathing sounds not remarkable. No râles. Heart: 2.5 cm. to right, 10 cm. to left of median line. Apex in fifth space inside nipple line. Sounds of fair quality, rate slightly rapid, no murmurs heard. Abdomen: soft, tympanitic, no masses, tenderness or fluid. Liver and spleen not felt. Extremities: No oedema. Reflexes: Knee jerks present, moderate Kernig sign, doubtful Babinski, ankle clonus, and Oppenheim.

August 20. Patient entered in a very stuporous condition, with evidence of meningeal irritation, exaggerated knee jerks, doubtful Kernig and ankle clonus. No Babinski. Irrational. Lumbar puncture performed yesterday. Clear fluid spurted out a distance of six inches and then settled down to a steady stream; 30 cc. removed. Wassermann and colloidal gold tests of fluid negative. Cell count 300 per cubic mm., with lymphocytes preponderating. Widal and blood Wassermann negative. Urine negative except for rare leucocyte. W. B. C. 11,000.

Temperature at admission, 101.0°. Temperature August 19, day of first spinal attack, 100.0°-100.8°. Temperature August 20 to September 14, highest 99.0° on September 4 and 10. Otherwise normal or subnormal. Ninety-seven and four tenths degrees August 23, 97.8° September 6.

Within four hours after lumbar puncture patient was much brighter, and today (20th) was found by the service sitting up in bed reading the morning paper, remembering incidents of the previous evening and desiring to get up. Had no remembrance of lumbar puncture. Seen today by neurologist, who reports no abnormal findings and advises observation for two weeks.

August 25. Patient improved daily. No return of symptoms. Lumbar puncture performed again today, 15 cc. of clear fluid coming in a constant stream under slight pressure. No clot formed. Cell count 30 cells per cubic mm., with 75% lymphocytes and 25% neutrophiles. No organisms in the smear.

August 28. Patient complained today of pain in abdomen and headache. More stuporous. Reflexes normal. Cries out continually, "Oh, gool!" (This was evidently a relapse.)

October 2. After several unsuccessful "dry taps," lumbar puncture was performed yesterday, obtaining 15 cc. of clear fluid under very slight pressure. Cell count 18 per cubic mm., lymphocytes predominating, no clot, bacteriological examination of the smear negative. Patient now mentally clear, feeling fine, attack described in last note cleared up in thirty-six hours.

October 6. Up and about daily. Physical examination negative. No headaches or symptoms.

October 14. Free from symptoms over two weeks. Discharged well.

(As stated in the first part of this paper, I learned in February, 1917, from his family physician, that this patient died in November, 1916, of tuberculous meningitis. There would seem to be no satisfactory explanation of the remission of symptoms and apparent cure, without actual change in the course of the disease as shown in this case. Since then, I have seen two other cases of undoubted tuberculous meningitis, which showed a similar remission of symptoms for a brief period, following lumbar puncture.)

CASE 2. M. M. L. 7 years old. March 14, 1911. *F. H.*—Four brothers and sisters living and well. No T. B. *P. H.*—Broncho-pneumonia twice. Has had a dorsal Pott's disease since two years old. Has been treated at Children's Hospital ever since and is wearing a plaster jacket. Had pertussis for past five weeks, now getting over it. Was told January 1 by school physician that she had phthisis. *P. I.*—Still has attacks of vomiting, worse past two days. Retains no food now. Has pain in temples and in vertex. Has night cries, not marked nor loud. Had convulsions last night. Now seems delirious. Does not speak.

P. E.—Well developed and fairly nourished. Wearing plaster jacket. Does not answer questions, apparently rational. Quietly delirious. Keeps rolling head. Eyes are constantly turned to the left. Pupils react very sluggishly. Neck slightly rigid and tender. Heart not examined. Pulse: Poor volume and tension. Lungs: Dullnes at left apex with crepitant râles. Medium moist râles at right apex. No Kernig. Well marked Babinski on each side. Temperature 100.2°, pulse 120, respiration 30.

March 15. Seen yesterday by pediatrist, who can suggest no further treatment and concurs in diagnosis. Removal of plaster jacket advised by orthopedist. Child is slightly worse and had a bad night. Still having convulsions. Plaster jacket removed.

March 16. Slightly more rational. Taking sufficient nourishment by mouth.

March 17. Much improved. Meningeal irritation has almost disappeared.

April 20. Now able to be out and running about. No more symptoms of meningitis. Lungs as before.

CASE 3. A. R. 29 years old. Single. Colored. Longshoreman. January 16, 1907. *F. H.*—Mother died, cause unknown, otherwise negative. No T. B. *P. H.*—Always well. No alcohol for two months. Averages half pint of whiskey a week. *P. I.*—Duration one month. Onset gradual. Complaint, pain in left side of pelvis, epigastrium and knees. Was "ailing for two weeks," when pain forced him to stop work. In bed for a week. Pain in knees and legs, without swelling, with occasional tenderness, not red, cold to the touch. No chills; slight, vague, occasional pain in abdomen, moving from place to place. No pain in any other joints. No vomiting. No cough. No headache. Occasional dyspnoea. Good appetite. Sleep prevented by pain. Bowels not for a week. Urine cloudy. No gleet for two years.

P. E.—Well developed and nourished. Slight prostration. Colored. Pupils equal and react to light and distance. Tongue: Protruded, straight, clean. Throat: Negative. Neck: Not rigid or tender. Glands: Not generally enlarged. Pulses: Equal, regular, good volume and tension. Heart: 2 cm. to right, 10 cm. to left of median line, base at third rib, apex in fifth space inside nipple. Action regular, sounds clear, no murmurs. Lungs: Good resonance and respiration throughout. Liver: Dullness fifth rib to costal margin. Edge not felt. Spleen not felt. Abdomen: Low down over bladder patient complains of slight tenderness on deep pressure. Extremities: Knees swollen; slightly red and tender. Knee jerks equal. No oedema. Urine: Negative. Temperature 99.0°, pulse 60, respiration 18. On January 18, 19, 28, February 8, 10, and 12, temperature reached 100.0°; otherwise about normal. January 20: Still complains of pain in abdomen and knees. Eats and sleeps well. Urine: Pale, neutral, 1020, slightest possible trace albumen, no sugar. Sediment few red blood corpuscles and epithelial cells and uric acid crystals. No casts. January 24: Knees much better. Vague pain in abdomen continues. January 28, February 1, 5, 9, still complains of pain in abdomen at each note. February 13: Complains of weakness and indefinite pains. February 16: Up past three days. General physical examination negative. Still complains of vague pains. Discharged relieved. Diagnosis: Influenza.

Re-admission to hospital February 25, 1907. *P. I.*—Patient still complains of the same pains around the region of bladder, but with greater severity. *P. E.*—Moribund. Conscious. Rational. Pupils react to light and distance, equal. Tongue: Protruded straight, clean. Neck: Not rigid or tender. Glands not enlarged. Pulses: Equal, very irregular, poor volume and tension. Heart: 4 cm. to left, 9 cm. to right of median line, base at third rib, apex at fifth space inside. Action irregular, sounds almost inaudible. Lungs: Few râles at right base behind. No dullness. Absent breath sounds over entire right lung. Liver: fifth rib to costal margin, edge not felt. Spleen not felt. Abdomen: Soft, tympanitic, not tender. Extremities: Both arms and both legs completely paralyzed. Patient unable to swallow. In spite of treatment patient grew weaker and died in four hours.

Autopsy report (in part abbreviated): February 28, 1907: Three days post mortem. In mid portion of left psoas muscle there is an abscess cavity filled with thick yellowish pus. Cavity definitely outlined and walls covered with thick yellow pus. Probe passed upward within cavity follows course of psoas fibres to region of attachment, where abscess communicates with necrotic area between two lumbar vertebrae. In right psoas muscle is a small abscess cavity. This also communicates with necrotic vertebrae. Between second and third, and third and fourth lumbar vertebrae, the inter-vertebral disks have for the most part disappeared, leaving small cavity filled with thick yellow pus. Surfaces of vertebrae bounding the cavity are roughened and small spicules of bone are easily felt with the probe. Cavity between third and fourth vertebrae communicates directly with spinal canal. Smears from pus from between vertebrae show numerous tubercle bacilli in groups and with quite marked vacuolation. Mesenteric lymph nodes not increased in size or consistence. Peritonaeum smooth except where spleen is firmly bound to diaphragm. Pleural cavities: Left, no adhesions; right, almost obliterated by dense fibrous adhesions. Lungs: Left, except for posterior part of lower lobe, crepitant. Latter area slightly firmer, dark red, and bathed in a thin air-containing bloody fluid. Right lung deep red throughout. Crepitation slightly decreased, nowhere absent. Thin bloody fluid on section. No T. B. areas on careful search. Bronchial lymph nodes show no macroscopic tuberculosis. Heart, spleen, gastrointestinal tract, pancreas, adrenals, bladder, genitalia, and aorta all negative. Liver: Shining through the surface are several small glistening grayish areas, some of which are made up of moderately dense tissue, while others show central softening. From some of them small drops of pus escape when incised. Head: Not remarkable. Spinal cord dura, shows great congestion of vessels. White substance soft, and with distinct markings on sections. Gray matter stands out prominently and is light pink. On section, the white matter wells over cut edges. Just opposite third lumbar spine, adherent to the posterior portion of the dura and the adjacent spinal canal is a small amount of thick pus.

Anatomical diagnosis: Acute tuberculosis of spine. Psoas abscesses (tuberculous). Multiple abscesses of liver. Chronic adhesive pleuritis. Congestion and oedema of lungs, congestion and oedema of brain and cord.

CASE 4. G. C. 23 years old. Single. Table girl. September 8, 1916. *F. H.*—Father died of typhoid. Mother died, cause unknown. Three brothers living and well. Nine brothers died, cause unknown. *P. H.*—Measles and whooping cough as a baby. Tonsillectomy at 10 years. Pleurisy 13 years ago. Habits: Occasional beer or whiskey. Cta. regular. *P. I.*—Patient states that four days ago she had a sore throat and headache, and vomited several times. Cough since onset. Complains of feeling warm about the head, while extremities feel cold. No dyspnoea. No urinary symptoms.

P. E.—Poorly developed and nourished. Face flushed. Marked prostration. Conscious and rational. No dyspnoea or cyanosis. Eyes: Pupils equal and react to light and distance. Ears and nose: No discharge. Mouth: Teeth poor. Throat: Markedly reddened and oedematous. Small perforation in centre of soft palate. Uvula bifid. Neck: Held somewhat rigid, no retraction. Glands of neck markedly enlarged and somewhat tender. Lungs: Moderate dullness at both apices with harsh respiration, otherwise negative. Heart: 3 cm. to right, 9 cm. to left of median line, apex in 5th space in nipple line. Sounds of fair quality. Soft systolic murmur at apex, not transmitted. Pulses: Equal, regular, fair volume and tension. Abdomen: No masses, tenderness, or spasm. Liver and spleen not felt. Extremities: No oedema or tenderness. Knee jerks present and equal.

	8TH	12TH	13TH	15TH	17TH	20TH
Temperature.	101.0	99.0	103.0	103.0	104.0	106.0
Respiration ..	24			28		30
Pulse	110	88	108	118		130

White count on 15th, 17,000.

September 12: Patient markedly prostrated. Throat is very red, oedematous, and with bulging forward of posterior pharyngeal wall in the median line. On entrance a syphilitic condition of the throat was suspected and the aural consultant considers this probable. Today throat suggests a retro-pharyngeal abscess, except that when the protruding mass is touched with a tongue depressor, or with a metal instrument, the mass seems bony hard. Patient is unable to swallow. September 16: Patient growing constantly worse. Seen again by the aural consultant, and a diagnosis of a probable bony tumor from the body of a cervical vertebra is made by him. Today there is noticed marked stiffness and retraction of the neck, with a double Kernig sign. Lumbar puncture was done and cloudy fluid under considerable pressure was obtained. Culture made from this fluid showed no growth. Flexner's serum given. Wassermann negative. September 20: Patient taking no nourishment. Heart and lungs negative. Patient failed progressively and died this morning. Mass in the throat persisted up to the end. At autopsy there was found a marked case of meningitis. The spinal cord was soft and the canal was full of pus, in which the pneumococcus was found. There was absolutely nothing abnormal in the throat nor in the bodies of the cervical vertebrae.

CASE 5. H. J. 23 years old. Single. Janitor. February 9, 1917. *F. H.*—Father and mother, and three sisters living and well. No T. B., cancer, or insanity in the family. *P. H.*—Measles as child. No diphtheria, scarlet fever, or pertussis. Pneumonia 14 years ago. No typhoid, rheumatic fever, or tonsillitis. No operation or injury. Always incontinent of urine (and faeces ?). *P. I.*—Appetite good. Sleeps well. Bowels once daily. Nocturia occasionally, no dysuria or hematuria. Occasional headache. No dizziness or syncope. No cough, dyspnoea, haemoptysis, or haematemesis. Occasional indigestion and belches much gas. No palpitation or precordial pain. No oedema. Never jaundiced. Occasional epistaxis.

Patient was born in a very difficult forceps delivery. There was a question of trauma to nose and forehead from forceps. Nose flat ever since. Since birth "has passed considerable fluid through nose; at times fluid becomes hard and crusted, and when removed shows a cast of that part of nasal cavity from which it came. About a year ago this discharge from nose ceased, recurring on one side only, ten weeks ago, the other side seeming to be stopped up." Two weeks ago patient had an attack of vomiting, which, according to parents, was of projectile type. Had two attacks of vomiting in next three days. About 8 days ago had a convulsion followed on the next day by another, and two days later by a third. Patient himself is dull mentally and no history can be obtained from him as to headache, etc. Parents say that he was always bright in school until he got into the High School, when he became dull and developed a peculiar gait, with awkwardness in all his movements. Gives a history of haemophilia, but tests in hospital have not borne this out.

P. E.—Well developed and nourished. Conscious and rational. Face flushed, breathing somewhat heavily. Stuporous. Head: Cranial bones large compared with size of face. Nasal bones undeveloped and nose of saddle-back type. Upper lip short; drawn upward. Eyes: Pupils small, react sluggishly to light and distance. Motions normal. No strabismus or ptosis. Mouth: Slight pyorrhea. Tongue protruded straight, moist, coated. Ears: Small, not abnormal. Throat: Slight inflammation of pharynx. Neck: No glands. No stiffness. Chest: Pigmentation of left nipple. Heart: Apex in fifth space inside nipple line. Right border 2 cm. to right, left border 10 cm. to left of median line. No thrill. Slight systolic at apex. A2 greater than P2. Lungs: Expansion equal. Resonance, vocal fremitus, and whispered voice normal. Breathing over left lung near scapula intensified and with an occasional râle. Abdomen rounded, tympanitic, no tenderness, spasm or tumors. Extremities; No oedema. Motions normal. Knee jerks present.

Laboratory Reports. Wassermann negative. Widal negative, February 17 and February 18. W. B. C., February 10, 7,200; February 18, 9,400 Blood pressure: Systolic, 145 mm.; diastolic, 90 mm. Urine: February 13 and 15, pale, acid, 1006-1007, no albumen, no sugar. Lumbar Punctures: February 10, 15 cc., clear fluid with 20 cells per cubic mm.; February 18, 18 cc. clear fluid under slight pressure with no organisms present. At entrance, temperature, 102.0°; pulse, 80; respiration, 30. February 13, 1917: Temperature, 101.8°; pulse, 94; respiration, 25. Patient dull mentally, incontinent of urine and faeces. No complaint or apparent discomfort. . Physical examination negative except for a definite Babinski sign on the right for the past three days, and neck slightly rigid. Pupils inequal but react to light and distance. February 17: Condition unchanged. Temperature still elevated, cause not determined. Mentally still very dull. Answers questions fairly well. Physical examination as at last note. February 21: X-ray of brain shows a large sella turcica, 25 mm. in diameter, with thinning of the walls, and obliteration of the clinoid process. Probable enlargement of the pituitary body. Neurological consultant makes a diagnosis of cerebral tumor or brain abscess. February 24: Aural consultant reports "profuse discharge of pus from left sphenoid and ethmoid sells, left maxillary antrum apparently discharging pus." February 27: Temperature normal. Parents refuse operation. Discharged with the diagnosis of cerebral abscess and acromegaly.

REFERENCE.

[1] The Meningeal Syndrome and Other Sources of Error in Pyelitis, Boston Medical and Surgical Journal, Nov. 15, 1917.

BLOOD PLASMA CHLORIDES VERSUS RENAL FUNCTION.

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The significance of the chloride content of the blood is imperfectly understood. Widal, Ambard and their associates and, more recently, McLean at the Rockefeller Hospital, have brought out several interesting features of this problem. The threshold for excretion of sodium chloride, *i.e.*, the concentration of sodium chloride in the blood plasma necessary to start excretion of the salt into the urine, is fairly constant at about 562 mgm. per 100 cc. of plasma. When the concentration of sodium chloride in the plasma falls below this threshold value, excretion of chloride practically ceases. The threshold of sodium chloride secretion is not fixed but varies in health and is much influenced by the administration of drugs and by disease processes. It can be considered to represent a regulatory mechanism for the maintenance of a fairly constant composition of the blood. In this respect, it resembles the mechanism in regard to water and sugar excretion and differs from the excretion of nitrogenous substances, which have no threshold value below which excretion does not take place. From the relationships of plasma and urine chlorides to this threshold, Ambard, Chabanier, and Onell have developed their work on the sodium chloride-secretion-constant.

In dropsical renal disease, the secretion threshold is elevated and points to a lowered ability of the kidneys to excrete sodium chloride. On the other hand, the slight retention frequently seen in the nephropathies may be quite independent of any defect in the sodium chloride elimination. Because of the variation seen in health and in disease, calculation of the threshold value for clinical purposes, in an endeavor to secure the sodium chloride permeability of the kidneys, is of little value in the presence of mild degrees of retention. It is early in disease processes that we wish to secure evidence of impaired function—at a stage when something can be done therapeutically—and it is because of the features mentioned above that the threshold studies of sodium chloride give us but little aid in early recognition of decreased renal excretion.

That there is some degree of selective excretion by the kidneys seems established. In some cases, urea excretion may be normal while that of uric acid may be definitely impaired. The same selective excretion probably pertains to sodium chloride also. Evidence pointing in that direction may be noted in the "concentration" and "dilution experiments" worked out by Hefter and Siebeck, the "fixation of specific gravity" studies reported by Hedinger and Schlayer and the extensive studies on excretory response to varying diets as worked out by Mosenthal and others.

McLean has summarized our information relative to the problem as follows:

1. The normal and usual range of concentration of blood plasma chloride is from 562 to 625 mgm. per 100 cc. of plasma or higher, according to the amount ingested. On the excess over 562 mgm. per 100 cc. of plasma depends the rate of excretion.

2. There is a relative increased concentration in certain cardiac and renal diseases.

3. Under certain conditions, notably fevers and diabetes, or by the action of diuretics or heart tonics, the chloride threshold may be temporarily or permanently lowered.

4. Failure to excrete chlorides in pneumonia is associated with a lowered concentration of chlorides in the plasma.

5. Edema is usually accompanied by a relatively increased concentration of chlorides in the plasma.

6. Chlorides and urea functions are quite independent of each other.

Most of the work in the blood chlorides has been done on young, healthy adults without evidence of renal disease or on patients suffering from active diseases, acute or chronic. During studies on renal functions here, determination of the plasma chloride values were made by a method described recently.[1] These values were compared with the elimination of phenolsulphonephthalein, the blood urea findings, the blood pressure readings and the urine specific gravity. Other features of the urine analyses were disregarded (there were no cases of glycosuria in the group) for in the type of patient studied, no value can be ascribed to the findings of albuminuria and cylindruria. The cases studied in this connection were active institutional cases, all were workers in the industrial rooms, wards or on the farm, none of them (unless noted) showed any edema, cyanosis, dyspnoea, or other features which are known to compromise excretory rate. The ages of the patients varied from 40 to 85 years, the majority were over 50. None of them were taking drugs of any kind. The blood in every instance was drawn before breakfast, some 12 hours after the preceding meal. The urea determinations were made by the Marshall urease method, the aeration and titration procedure being employed. Determinations of plasma chlorides were made on 5 cc. of plasma, the urea analyses on 5 cc. of citrated blood. The phenolsuphonephthalein test of Rountree and Geraghty was done in the usual manner. The blood pressure values represent the variations from time to time over a period of months, some are the mean of numerous readings.

Table I gives .the figures in a group so studied.

TABLE I.

Number	Plasma Chloride (Mgm. per 100 c.c.)	Phthalein	Blood Urea Nitrogen	Blood Pressure	Urine Sp. Gr.
1	594	60%	8.4	140-95	1030
2	512	15%	23.3	120-60	1024
			29.9	165-55	
3	560	30%	10.1	180-95	1022
			14.0	210-80	
4	570	40%	12.8	185-85	1012-22
				230-90	
5	570	50%	13.4	165-105	1019-22
			13.7	190-110	
6	550	65%	13.4	175-105	1024
	534			130-90	
7	546	60%	19.0	125-75	1020
			21.8	155-90	
			17.4		
8	618	55%	13.4	190-94	1014
			15.1	210-85	
			9.2		
9	662	60%	22.4	165-85	1012-24
		35%	15.4	180-95	
10	570	35%	17.3	165-95	1010
		55%		170-95	
11	570	50%	16.0	160-100	1014
"	572		15.4		
12	570	30%	12.2	135-90	1010-30
13	560	40%	9.5	140-90	1010
			16.2	175-90	

TABLE I. (*continued*)

Number	Plasma Chloride (Mgm. per 100 c.c.)	Phthalein	Blood Urea Nitrogen	Blood Pressure	Urine Sp. Gr.
14	554	40%	16.8	120-60	1002-10
15	603	40%	15.4	130-85	1020
16	566	30%	19.6	130-80	1012
		15%			
17	590	35%	18.5	130-90	1030
			19.9		
18	590	35%	10.1	150-85	1026
19	554	40%	18.5	155-85	1025
		30%	8.4	135-90	
20	558	50%	9.5	180-100	1012
			12.3	210-110	
21	542	5%	24.4	150-90	1021
		10%		160-95	
22	562	70%*	17.9	160-80	1013-22
		55%†	15.7	210-90	
		40%‡			
23	572	35%	10.6	185-120	1022
	578		13.4	190-110	
24	580	35%*	9.5	150-95	1020
		50%†	13.7	180-100	
		70%†	14.6		
25	572	5%	15.7	190-130	1015-30
		5%		150-100	
26	572	30%	16.5	170-115	1006-12
27	540	40%	15.4	170-95	1028
			19.0	180-100	
28	572	40%	12.0	150-100	1018
29	510	45%	12.9	200-120	1020
	522		13.4		
30	498	25%	19.6	160-105	1016
			18.5	170-110	
31	570	25%	11.2	160-90	1015
		35%		175-95	
32	560	30%	11.8	125-75	1020
				170-100	
33	522	10%	17.4	145-90	1025
		5%			
34	520	40%	17.6	170-80	1012-35
			17.6		
35	730?	45%	15.1	150-85	1020
			11.7	180-90	
36	596	25%	10.1	120-85	1025
	522		11.2	170-110	
			15.2		
37	542	60%	11.2	135-80	1024
			15.9	120-80	
38	536	50%	14.5	145-95	1020
			14.0	165-110	
39	590	45%	12.9	160-110	1028
40	570	10%	21.3	165-110	1012-20
41	596	15%	11.2	150-120	1012-22
				190-130	
42	580	30%	22.9	150-95	1012-20
			23.5		
43	658	55%	14.0	175-95	1020-28
44	590	40%	10.6	150-100	1025-30
		55%	11.8	180-100	
45	514	50%	7.2	185-85	1030
46	558	50%*	10.1	200-110	1028
		20%†	12.3	190-105	
47	566	40%	6.7	170-90	1008-18
48	630	40%†	14.0	145-85	1010-20
		30%‡			
49	558	45%	11.2	185-80	1010-14
50	558	65%	9.2	170-100	1016-18
			10.1	240-90	
51	610	40%	7.3	180-60	1008
52	560	50%	12.3	160-65	1008-20
				220-90	

TABLE I. (*concluded*)

Number	Plasma Chloride (Mgm. per 100 c.c.)	Phthalein	Blood Urea Nitrogen	Blood Pressure	Urine Sp. Gr.
53	530	60%	12.4	165-85	1016
54	566	25%	7.3	170-100	1004-40
55	546	45%*	18.4	210-130	1002-15
		15%‡			
56	610	40%	11.7	220-140	1010
	612	10%			
57	606	45%	12.4	135-85	1012-22
58	620	55%	12.3	210-140	1032
				250-70	
59	672	60%	15.4	160-85	1004-10
	540	40%	13.2	200-110	
60	620	65%	12.3	180-90	1022-24
			10.1	220-105	
			12.8	210-130	
61	558	40%	7.6	125-95	1012
62	575	50%	11.4	135-90	1016
63	602	35%	14.4	230-120	1010-14
64	638	15%	8.4	190-110	1020-23
65	670	40%	14.6	260-120	1024
	576				
66	594	60%	14.2	145-95	1030-31
67	560	55%	9.4	155-80	1014
68	602	30%	18.3	175-90	1010-14
69	578	15%	17.5	150-75	1020-24
70	590				
	594	35%	8.6	125-70	1030
			13.4		
71	566	40%	17.6	170-110	1015-35
72	586	50%	10.3	115-75	1022-30
73	586	30%	16.8	180-115	1008-22
74	578	70%	14.3	200-140	1016-30
			16.5	210-120	
75	562	25%	15.4	130-70	1022
			15.9		
76	590	30%	13.4	150-90	1002-24
77	550	45%	——	155-90	1020
78	646	40%	18.2	120-70	1024-30
79	586	45%	16.4	130-75	1032
80	566	28%	18.5	140-75	1020
		25%			
81	708	15%	23.6	230-100	1018-0
	708		22.2		
82	520	40%	17.6	170-80	1012-35
			17.6		
83	540	——	14.3	180-100	1020
84	658	55%	9.2	145-85	1017-26
85	570	25%	25.2	200-85	1020
86	558	40%	——	120-78	1010-18
87	578	60%	——	220-110	1030
88	558	40%	——	155-75	1020
89	586	25%	——	138-85	1012-22
90	590	35%	——	195-110	1010-18
91	540	40%	——	185-70	1030-32
92	594	25%	——	170-100	1008-14
93	590	50%	——	145-85	1020
94	558	35%	——	140-100	1020
95	560	65%	——	140-85	1024
96	588	50%	——	105-65	1010
97	606	40%	——	140-85	1012-26
98	550	45%	——	210-110	1020-22
99	526	25%	——	172-85	1012-20
100	594	50%	——	135-55	1024
101	582	25%	——	120-85	1021-24
102	566	70%	——	155-100	1026
103	554	30%	——	160-95	1020
104	558	60%	——	160-90	1070

* 1917. † 1918. ‡ 1919.

Of the 104 cases enumerated in Table I, 40 showed plasma chloride values ranging from 554 to 575 mgm. per 100 cc., there were 20 that showed values below 554 mgm. and the other 44 gave figures over 575 mgm. An attempt to relate the values found with the other findings, *i.e.*, the blood urea nitrogen, rate of elimination of phenolsulphonephthalein and blood-pressure readings, showed that of the cases showing a plasma chloride of 560 mgm. or less, 68% of such cases had a red test of 40% or higher, 60% had a blood urea nitrogen of 16.0 mgm. or less and 34% had a systolic blood-pressure of 150 mm. or less, while 26% had a systolic reading of 180 mm. or over. A review of similar findings in the whole group shows that 60% of them showed a red test of 40% or higher, 66% had a blood urea nitrogen of 16.0 mgm. or less, 38% had a systolic blood pressure of 150 mm. or less, and 27% had a pressure reading of 180 mm. or higher. The close relative approximation of these two groups of figures does not permit one to draw a conclusion that the plasma chloride figures bear any relationship to the other features taken as evidence of renal function.

It must be borne in mind that the plasma chloride values depend in part on the alkaline reserve of the plasma and, since the latter is quickly altered by exposure to air, the blood must be centrifuged promptly to minimize the alteration so produced, or drawn under oil to prevent the escape of carbon dioxide, consequent depression of bicarbonate in the plasma and resulting high chloride reading. In the group of cases studied here, the bicarbonate content of the plasma was not determined.

A second group of 40 cases was studied and the plasma chlorides of blood drawn 12 hours after the preceding meal were determined and compared with figures determined three to four hours after a regular meal. The values so found are given in Table II, together with the blood-urea-nitrogen, phenolsulphonephthalein output, blood pressure and urine specific gravity. 85% of the cases showed a definite rise in plasma chlorides after the meal, but an attempt to correlate the rise with any feature of the renal function as evidenced by the other findings enumerated, failed. In both series there was little tendency toward a low fixation of the specific gravity of the urine.

TABLE II.

NUMBER	PLASMA CHLORIDE (before breakfast)	PLASMA CHLORINE (3-4 hours after meal)	PHTHALEIN	BLOOD UREA NITROGEN	BLOOD PRESSURE	URINE SP. GR.
1	590	676	15%	32.8	180-100	
2	564	642	50%	10.4	215-100	1020-30
					160-70	
3	560	668	50%	9.5	140-90	1012-18
	522			14.0	175-120	
4	594	730	55%	13.2	160-120	1008-20
5	610	746	50%	12.2	130-70	1012-30
6	620	660	45%	16.0	130-60	1010-30
7	560	648	20%	20.2	165-95	1018-22
				21.3	180-85	
8	608	716	45%	17.0	135-90	1010-28
9	554	610	55%	7.3	140-70	1020-22
10	538	652	55%	10.4	120-70	1004-14
11	554	530	10%	7.6	155-90	1012-22
12	586	704	45%	8.8	125-75	1010-12
13	560	644	30%	16.3		
14	570	584	40%	10.6	160-90	1025-30
15	546	606	35%	11.7	150-75	1004-20
			15%	12.3	170-80	
16	608	600	15%	18.6	170-100	1022-30
					140-95	
17	618	652	60%	15.4	170-80	1008-30
				15.6	210-120	
				12.0	195-100	
18	600	642	40%	13.4	170-95	1013-14
		686			190-120	
19	590	634	65%	6.2	125-70	1014
20	602	716	45%	15.6	165-85	1078
				11.5		
21	570	572	35%	8.4	130-65	1005-25
22	582	648	45%	16.4	120-100	1032
23	582	660	15%	26.4	170-120	1015-21
			5%			
24	618	742	40%	14.6	170-120	1030
25	590	684	45%	12.9	155-110	1018-28
26	562	674	30%	19.0	115-70	1020-30
27	616	584	15%	18.4	160-90	1012-16
28	574	610	35%	10.6	150-80	1010-20
29	578	660	55%	6.7	205-85	1034
30	558	672	40%	13.2	140-90	1020-22
31	604	636	50%	10.6	160-75	1010-26
32	558	602	10%	17.4	145-80	1028
33	560	584	45%	12.4	130-85	1010-16
34	574	712	——	——	100-55	1010-20
35	562	570	70%	8.4	135-75	1010-20
36	598	596	40%	14.2	140-80	1014-16
37	578	714	40%	8.4	120-80	1025-30
38	610	602	30%	——	145-70	1020-28
39	580	608	——	16.8	160-100	1025
	576				210-120	
40	616	584	15%	22.4	180-100	1012-14

Attention was later turned to the so-called cases of essential vascular hypertension as seen in the out-patient clinics and wards of a general hospital. In these patients, no evidence of nitrogen retention or depressed phenolsulphonephthalein output is obtained to suggest that the origin of the hypertension is failing excretory function. The group which has been studied is still too small to allow comment, but it seems quite probable that many of these people have a high kidney threshold for salt in relation to their elevated blood-pressure. Attempts to lower the threshold of excretion have been tried but they introduce new features, such as the effect of ingested alkali on the distribution of salt between plasma, red cells and tissues. In some cases, however, it is possible to secure a markedly increased salt output in the urine with a fall in plasma chlorides, but the mechanism is not entirely clear.

SUMMARY.

The blood plasma chlorides were determined in 104 patients showing no obvious evidence of compromising physical disease, the blood being drawn 12 hours after the preceding meal. The ages ranged from 40 to 85 years. No relationship could be established between the chloride values and the blood urea nitrogen, rate of elimination of phenolsulphonephthalein, blood pressure readings or urine specific gravity.

In a second group of 40 cases, the plasma chlorides on fasting blood and blood drawn four hours after the preceding meal were determined. Although 85% of the cases showed a definite and considerable rise after the meal, the rise would not be associated with any consistency with the parallel determinations enumerated above.

The small group of cases of so-called essential vascular hypertension studied seem to show an elevated renal threshold for sodium chloride. Attempts to lower the threshold have given no conclusive results.

REFERENCE.

[1] Rappleye, W. C.: A Simple Application of the Volhard Principle for Blood Plasma Chlorides, Jour. Bio. Chem., Vol. xxxv, No. 3, September, 1918.

INSTITUTIONAL CONTROL OF DIPHTHERIA.

BY FRANCIS A. FINNEGAN, M.D., BOSTON,

District Health Officer, Massachusetts State Department of Health.

DIPHTHERIA, a communicable disease with an established etiology,—the Klebs-Loeffler bacillus; with a specific curative agent,—antitoxin,—is still responsible for more deaths in the United States than whooping cough, measles, or scarlet fever. It is accountable for 4.4% of the total mortality at ages under 15 years in the registration area, and the average yearly toll is approximately 23,000 lives.

Many reasons are put forth for this still too great mortality, such as failure to call the physician early enough, a delayed use of antitoxin and in very severe and late cases the non-use of the intravenous administration of antitoxin. All these facts have been strikingly brought to light by investigators of diphtheria mortality. Failure on the part of the parent or guardian to consult the physician early enough means a late administration of antitoxin and lessens the chances of recovery. Evidence is positive and overwhelming that the earlier the use of antitoxin in any given case the better the result and the greater the chance of recovery.

Dr. J. M. Clements of Hull, England, in discussing diphtheria in elementary schools, and its prevention, said that the mortality among cases coming under his care from 1903 to 1906, classified to the day of the disease on which antitoxin treatment started, that of those coming under treatment on the first day was nil; on the second day 1.5%; on the third day 8%, etc., the mortality percentage rising with each successive delayed day.

The intravenous injection of antitoxin in very late and severe cases lets loose immediately into the blood stream the curative agent and results in a quicker attack upon the diphtheria toxin or poison circulating in the blood.

It would seem, therefore, they must utilize another practical method of immunizing against diphtheria. The Schick test has made it possible readily to detect persons susceptible to the Klebs-Loeffler bacillus or diphtheria bacillus and if susceptible to be actively immunized with three injections of toxin antitoxin at weekly intervals. Schick re-tests should subsequently be made to determine the success of the protection obtained. Already in two institutions in Massachusetts there has been successfully carried out the Schick test and after immunizing with diphtheria toxin antitoxin these two institutions, where formerly diphtheria had been endemic and epidemic at times, have been able to keep their diphtheria rate to almost nil since the advent of this practical method of control. Each inmate on entrance is given the Schick test and if positive (meaning susceptibility to the disease), is given three successive doses of diphtheria toxin antitoxin at weekly intervals. The re-Schick test is tried at intervals of six months, one year, two years, etc. In one institution where the work has been carried out for the past two years under the immediate supervision of the State Department of Health these re-Schick cases on persons once susceptible, that is, with a positive Schick and actively immunized with toxin antitoxin, are now negative Schicks, showing that the immunity produced has afforded, up to the present time, a two-year protection.

In New York where the work has been carried out by Drs. William A. Park and Abraham Zingher the protection afforded to all those immunized by toxin antitoxin has now lasted several years. Up to the present time this procedure has been confined to institutions and is undoubtedly most excellent and valuable. Applied to a community it would mean that with increasing knowledge of the number of permanent immunes and the selection and immunization of the susceptible ones we may finally be able to get control of the disease that continues to be one of the biggest issues of preventive medicine.

Clinical Department.

TWO CASES OF FOETAL ASPHYXIA WITH UNCOMMON HISTORY.

By Charles J. Kickham, M.D., Boston,

Obstetrician, St. Elizabeth's Hospital.

Case 1. Mrs. K. Para vi. Previous history, normal deliveries.

Patient about term. Had been in habit of arising about 6 A.M. each day and walking to bathroom, a distance of about 30 feet. On morning in question, arose as usual and started for bathroom; when about 20 feet from bed, felt "something come down in passage" and went back to bed. Patient had no pain or discomfort and thought her "womb had fallen." Immediately called the writer by telephone, but did not attempt herself to ascertain the condition, assuming that it was "fallen womb."

I reached patient's house in about one-half hour and found her in bed covered by sheet and blanket and got the above history.

On pulling back covers, to examine, found full-term foetus wholly outside vagina, with the exception of head, the latter was still within vagina and vulva contracted around neck. Complete delivery done at once and foetus found in state of pallid asphyxia but with foetal heart still audible. Continuance of efforts to resuscitate, for more than one hour, proved futile and child died without breathing.

Comment. Child probably died from smothering and not from vulval pressure on cord or neck, and thus interference with blood supply. Seemed strange that patient had no pain and that what was apparently a breech presentation did not complete itself by precipitation on floor, since perineum and cervix were so far relaxed as to allow a full-term body to be born through vulva without subjective pain to mother. Unfortunate that patient did not examine herself, in which case she might have completed the delivery and saved the life of the child.

Case 2. Mrs. B. Para iv. Previous history, normal deliveries.

Patient about term. Went to bed and to sleep at about usual hour. Awakened in about one hour with sharp pain in lower abdomen and felt "something" come away, which she thought was probably baby. Husband called me at once and upon entrance into room, I heard infant's cry and assumed that precipitate delivery had taken place, with living baby. After scrubbing up, went to tie cord and on examination found that a twin precipitate delivery had taken place and that one foetus was still within its amniotic sac, which had not ruptured, though entire sac was outside vulva. Membranes ruptured at once and though foetal heart was beating, child had typical appearance of pallid asphyxia and all attempts at resuscitation failed; baby died without breathing.

Comment. Uncommon to have twin precipitate delivery. Strange that force of delivery did not rupture both amniotic sacs. Unfortunate that mother did not recognize that twin delivery had taken place, in which case she might have ruptured sac and saved baby's life.

Book Reviews.

Industrial Nursing. By Florence Swift Wright, R.N. New York: The Macmillan Company. 1919.

This volume attempts to outline the conditions by which the nurse is confronted upon entering the field of industrial nursing. This work is as yet too recently developed to have become standardized; but an outline of the necessary methods, records, equipment, and restrictions as they exist at the present time, subject to modification in the future, will be of great value to the pioneers in this field of service. The work of the industrial nurse is so varied that a general description of it is difficult. This volume, however, gives a comprehensive view of the activities of the industrial nurse,—in large and in small industries, in mills, factories, department stores, mining villages,—doing first-aid work, supervising lunch rooms and rest rooms, assisting in employment problems, teaching first aid, hygiene, home nursing, child care, and English, and visiting the homes. This book gives a brief historical account of the development of industrial nursing, outlines the qualifications and necessary training of the industrial nurse, the principles of nursing, and the relation between the nurse, her employer, and the workers. Of considerable help will be found the suggestions for organizing the first-aid room and for keeping records and reports. This book will prove to be a helpful guide to nurses who may desire to prepare themselves for meeting the growing demand for the trained nurse in industry; it should also indicate to employers to what extent the nurse can aid the development of his organization, employees, and the community.

Military Surgery of the Ear, Nose, and Throat. By Hanau W. Loeb, M.D. Philadelphia and New York: Lea and Febiger. 1918.

This manual of military surgery of the war reviews the surgical literature which pertains to the ear, nose, and throat. The author has divided his chapters into two parts: in the first he discusses wounds and treatment of the ear, nose, and throat on the basis of his own experience and from his study of war literature; in the second part he presents a more complete review of the literature in detail. In separate chapters are considered the treatment of injuries of the external ear, middle ear, and internal ear, the psychoneuroses of hearing and speech, reconstruction and reëducation, injuries of the external nose and nasal cavities, of accessory sinuses, the throat, the pharynx and esophagus, larynx and trachea. The problem of paralysis in connection with wounds of the throat, stenosis of the larynx and trachea, and the ear and aviation are other topics of interest. The book has been written from the point of view of a trained otolaryngologist, with no explanation of elementary principles and practice.

A Textbook of Urology in Men, Women and Children, Including Urinary and Sexual Infections, Urethroscopy and Cystoscopy. By Victor Cox Pedersen, A.M., M.D., F.A.C.S. Major, Medical Corps, United States Army; Consulting Physician to the Selective Service Headquarters in the City of New York; Member of the Council of National Defence, New York State Committee, Medical Section; Visiting Urologist to St. Mark's Hospital; Major, Medical Reserve Corps, United States of America; Member of the American Urological Association, American Medical Association, New York State and County Medical Societies, New York Academy of Medicine, American Electrotherapeutic Association, the Association of Military Surgeons of the United States, and of the Committee on Venereal Diseases of the Advisory Council of the Department of Health of New York City. Illustrated with 362 engravings, of which 152 are original and 13 colored plates. Philadelphia and New York: Lea and Febiger 1919.

This is a large book of about one thousand pages and is written from a point of view which makes it difficult to review. Its perspective is quite different from that of most important works of this kind. The first two-thirds of the whole book are devoted to a careful, detailed, most thorough, and excellent consideration of the great subject of gonorrhea, its sequelae and complications in both sexes and in all ages, while another great subject—that of "Diseases of the Prostate"—is given attention only in the last twenty pages of the book. The surgery of the whole urinary tract from prostate to kidney is confined to the last two hundred pages. Gonorrhea and its sequels, then, have received the lion's share of attention, and from this point of view the book is of the first importance. The urologist, however, who is interested in his specialty chiefly from the side of operative surgery will not be so well satisfied.

There are excellent chapters on the "General Principles of Diagnosis" and the "General Principles of Treatment." The chapters on urethroscopy and cystoscopy are good. In his consideration of the treatment of some of the more chronic manifestations of inflammatory disease, it is pleasant to find the author insisting upon the usefulness of those all too much neglected assets, hydro-, helio-, and electrotherapy.

The book has been prepared with the most painstaking care and thoroughness and its index is adequate. The illustrations are for the most part good but are noticeably lacking in connection with some descriptions of operative technique where their presence would have helped. The author may feel that his four years of hard work have produced a valuable book which the publishers have printed in a form worthy of it.

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COMPULSORY VACCINATION.

This year the joint committee of the Massachusetts Medical Society and of the Massachusetts Homeopathic Medical Society on State and National Legislation has introduced a bill to amend the present law, as follows:—

Section 6.

A minor under fourteen years of age who has not been vaccinated shall not be admitted to a public or private school except upon presentation of a certificate signed by a registered physician that the physician has, at the time of giving the certificate, personally examined the child and that he is of the opinion that the physical condition of the minor under fourteen years of age is such that his health will be endangered by vaccination. The said certificate shall state the reason for the opinion of the physician who signs it, and shall be valid only for one year from the date thereof.

A similar bill failed of passage by last year's Legislature. During the past year the anti-vaccinationists have not only been unusually noisy but they have also carried on such an energetic still hunt among the legislative candidates that they now claim a majority for the repeal of all compulsory vaccination.

It would therefore, at first thought, not seem to be a favorable time to seek for improvements in the present law. But would it not be better to let the law be repealed than to let its enforcement continue to be so partial and farcical as it is now?

Why should the private schools continue to be exempted from the vaccination that is required of all public school pupils? They do not want to be exempted. And why should school committees and boards of health have to accept, as an excuse for the non-vaccination of any pupil, a medical certificate signed, perhaps years before, by a physician who may never have even seen the child?

There are some physicians, no doubt, who honestly believe that vaccination is detrimental to health. There are others who are willing to oblige parents who cherish this delusion by signing exemption certificates. All right. Be it so. Surely there can be no valid objection by such physicians and parents to the requirements of the proposed amendment that these exemption certificates shall be given only after physical examination, shall state the reasons for belief that vaccination would be detrimental, and shall be good for only one year from date.

Of course it is useless to try to change the anti-vaccinationists, just as it is vain to expect the unanimous approval of any other measure however well it may have been proved to be for the common good. But where either the enactment or repeal of laws for the protection of the public health is proposed the responsibility rests upon the medical profession to give the facts and to explain the principles involved. If every Senator and every Representative is given these facts regarding both the efficacy and the harmlessness of vaccination as it is now practised, then, and only then, shall we be clear of responsibility in case the anti-vaccinationists defeat the proposed perfecting amendments or, worse yet, succeed in repealing our present law. This duty, while devolving heavily upon the committee really rests upon us all.

Alfred Worcester, M.D.,
President, Massachusetts Medical Society.

METHYL ALCOHOL POISONING.

As was to be foreseen, the prohibition of the sale of wholesome alcoholic beverages has resulted in the placing on the market of poisonous illicit beverages containing methyl alcohol. This tendency is, of course, becoming more pronounced as private supplies are exhausted, and there have been reported recently a number of poisoning cases in Connecticut and Western Massachusetts. On December 27, 1919, the number of deaths in Springfield, Hartford, Chicopee, Holyoke, Greenfield, and Thompsonville had reached sixty-two. Upon investigation, it was discovered that the proprietor of a hotel in Chicopee had bought fifty gallons of supposed whiskey manufactured in New York chiefly from wood alcohol.

In Boston there had been reported up to December 27 only two deaths due to methyl alcohol. In order to warn the public against the dangers of such beverages, Dr. William C. Woodward, of Boston, issued a statement describing the nature of methyl alcohol poisoning. Vertigo, blindness, and death generally follow an overdose in rapid succession. The physiological action of methyl alcohol differs from that of grain alcohol in that the coma persists for longer periods of time. The alcohol is oxydized to formic acid, which is eliminated as sodium formate after it is taken into the body, so slowly that the repetition of small doses results in the cumulation of the poison. The exhilarating effect produced by methyl alcohol is followed quickly by vertigo, nausea, vomiting, headache, dilated pupils, delirium, persistent coma, and death. Even in case of recovery, there is danger of blindness due to atrophy of the optic nerve. Blindness may be caused by five teaspoonfuls of methyl alcohol; death may result from taking less than one-half a pint. Death may occur after a few hours, or it may be delayed for two days.

For treatment, a syphon tube is used, the contents of the stomach are diluted with warm water, and the stomach is emptied. In some cases, the alternation of hot and cold water effusions help the coma. Artificial respiration may be necessary sometimes, and the circulation may need to be stimulated with strychnine. Strychnine and other stimulants often will benefit optic neuritis.

It is probable that in spite of the deaths reported recently in the Connecticut valley, Massachusetts is better protected against the misuse of methyl alcohol than other states. On July 24, 1919, there was passed by the Legislature a law requiring all dealers in methyl alcohol to procure a license. This statute, in addition to the protection afforded by the internal revenue laws, serves to restrict the use of the poison in this state. It is to be regretted that this law places no limitation upon sales.

The number of deaths from methyl alcohol which have been reported throughout the country has resulted in a government attempt to prohibit the sale of the liquid. Prohibition commissioners, in each state, have been instructed to use every possible means of warning the public. The Public Health Service is planning to distribute pamphlets showing the dangers of drinking any beverage containing large amounts of alcohol.

In regard to the deaths which have occurred already, investigation will be made and the offenders prosecuted. If present laws are inadequate, it is probable that Congress will be asked to pass additional legislation immediately. It has been suggested that the same system now in effect against the use of narcotics be applied to the sale of wood alcohol,—that the wholesale and retail dealers be licensed and allowed to sell the product only for purposes which are unquestionably legitimate. Although it was almost inevitable that prohibition should be followed by such a catastrophe, it is to be hoped that the recent tragedy will serve as a sufficient warning to the people of this country.

THE INCREASE OF VENEREAL DISEASE IN GREAT BRITAIN.

It has been for some time a debatable question as to whether the campaign against venereal disease is proving to be as beneficial as it has been hoped and believed that it would be. In this connection, it is interesting to note the views of a British writer on this subject in an article published recently in *The Medical Press*. He observes that it was to be expected that an increase in venereal diseases would be one of the inevitable results of the return of British soldiers to civilian life. In this there has been no disappointment; but can the continued increase be explained indefinitely on this basis?

It is true that hospitals and venereal centers still report an increasing number of applicants, which no longer can be explained and taken for granted as a result of demobilization. Since the ending of hostilities, soldiers and civilians alike have been warned repeatedly against venereal infection; every effort has been made by official and private agencies to educate the public and enforce the lessons of the preventive campaign. Yet, there are those who believe that the immediate result of educational efforts may have been carried too far and may have merely placed a premium upon immorality. The man or woman of questionable morality, although impressed by the statements regarding the noxious effects of a syphilitic infection, does not fail to appreciate that the risk can be taken at the present time with greater security than hitherto it has been possible. Furthermore, it is not unlikely that even the usual precautionary measures for cleanliness and prophylaxis may be taken less seriously than before the venereal clinic was at hand to welcome the offender and provide necessary treatment.

The object of the preventive campaign has been to benefit the race as a whole; yet it appears that not infrequently it is being made use of by the individual for personal rather than for altruistic purposes. By many British officials the increased incidence of venereal disease is regarded as a hopeful sign, indicating that it merely shows a wider recognition of the facilities for early treatment provided by the venereal clinics. It would be gratifying if this view could be accepted unquestionably; but the fact that there has been time for some noticeable improvement, while in fact there has been reported a seventy per cent. increase in cases of gonococcal conjunctivitis in infancy, leads *The Medical Press* to question the success of the efforts made to prevent venereal disease in Great Britain.

* * *

BOSTON MEDICAL LIBRARY.

THE annual meeting of the Boston Medical Library was held in Sprague Hall at the Library on Tuesday of last week, January 13, 1920. Dr. Edward H. Bradford gave an interesting talk entitled "Bone Setting, Osteopathy and Chiropraxy," which it is hoped may be published in a future issue of the JOURNAL.

At its stated meeting on December 9, 1919, the Council of the Library had voted to recommend to the Corporation the repeal of the present by-laws and the adoption of a revised draft already approved by the Council. The following explanatory statement indicates the nature and purpose of this revision:

"The division of members into Fellows and Associates, inaugurated in 1901, as based on the limits of old Boston and the Suffolk District Medical Society, is not appropriate at the present time, when the subway and the automobile have transformed the problems of transportation. A study of the map of Boston and its suburbs will show that the plan now proposed is much more equitable than the existing one, being based on distance from the library rather than on old, irregular county lines.

"Since removing to the Fenway, the number of books in the library has increased from 33,000 to over 100,000, and the expense of caring for these valuable collections is steadily increasing; salaries, coal, supplies, everything has gone up in price to an alarming degree. The library is dependent to a large extent on the dues of its members to meet its running expenses, our unrestricted funds being entirely inadequate for this purpose.

"The rearrangement and enlargement of the territory from which Fellows can be drawn, according to the plan now offered, should increase the number of Fellows and furnish some augmentation of our income. Those who, as a result, have their dues raised to ten dollars will be given the privilege of voting and of thus taking an active part in all the doings of the corporation. They can also help in a greater measure to sustain an institution recognized by all as of the greatest value not only to the medical profession but to the whole community."

The revision was unanimously adopted, and may be expected to meet satisfactorily the new conditions above described.

* * *

MEDICAL NOTES.

THE STUDY OF FOREIGN MEDICAL METHODS.—In order to make observations on public health administration and methods of medical education in England and on the Continent, Dr. Wickliffe Rose and Dr. Richard M. Pearce sailed recently for Europe. Dr. Rose is the general director of the International Health Board of the Rockefeller Foundation, and Dr. Pearce has been appointed recently director of a new division of medical education.

Yellow Fever Commission in Mexico.—The yellow fever commission of the Rockefeller Foundation, of which General Gorgas is the director, is being represented in Mexico by Dr. Theodore C. Lyster, formerly a colonel in the United States Army.

Dedication of Pathological Laboratory.—The principal address at the dedication of the new pathological laboratory of the Philadelphia General Hospital was delivered by Dr. William H. Welch. of the Johns Hopkins University, who discussed the important part played by morbid anatomy in the advancement of medicine. Other addresses were given by Dr. Arthur D. Bevan of Chicago and Dr. Louis B. Wilson of Rochester, Minnesota.

Increase in French Birthrate.—Statistics for the month of December, 1919, show a large increase in the birthrate in France, the rate in Paris having doubled since the beginning of the year. January, 1919, the birthrate was 9.5 per thousand, while for the month of December the rate exceeded eighteen per thousand. Deaths have decreased from eighteen per thousand in January last to fourteen per thousand in December. The number of marriages is increasing also.

Red Cross Aid for Former Service Men.—The American Red Cross has authorized the transfer of seven hundred thousand dollars' worth of Red Cross hospital material to Public Health Service hospital warehouses, to be used for the comfort of former service men who are under treatment in United States Public Health Service hospitals. The material includes gauze bandages, towels, comfort kits, laundry bags, fracture socks, and other articles. The supply will be ample to provide for the thousands of patients now in the hospitals as well as for the hundreds expected to enter for treatment. Any former soldier, sailor, or marine suffering from illness or injuries contracted in the service need only apply to the Red Cross home service section in his locality to take advantage of the expert service which the Government offers without expense to him.

Vanderbilt University Medical School.—The sum of four million dollars has been granted by the General Education Board of New York to be used for the purpose of enabling the university to effect an entire reorganization of its medical school and in establishing a new school of medicine in Nashville as an integral department of Vanderbilt University. Detailed plans have not yet been developed; but it is probable that they will involve the completion of the Galloway Memorial Hospital, with enlarged facilities for public patients, the erection of an additional hospital unit in the near future, the organization of a modern laboratory building, and the appointment of an increased number of professors to give their entire time to the school and hospital in both laboratory and clinical branches. The gift which will make this reorganization possible was made from the general funds of the General Education Board, and not from the recent donation of twenty million dollars made by Mr. Rockefeller for the promotion of medical education in the United States.

Gifts of Mr. Rockefeller.—An announcement was made on Christmas Day that two large gifts had been made by Mr. John D. Rockefeller,—fifty million dollars to the Rockefeller Foundation and fifty million to the General Education Board, the money to be available for immediate use. The gift to the General Education Board was accompanied by the following statement by Mr. Rockefeller:

"The attention of the American public has recently been drawn to the urgent and immediate necessity of providing more adequate salaries to members of the teaching profession. It is of the highest importance that those intrusted with the education of youth and the increase of knowledge should not be led to abandon their calling by reason of financial pressure or to cling to it amid discouragements due to financial limitations.

"It is of equal importance to our future welfare and progress that able and aspiring young men and women should not for similar reasons be deterred from devoting their lives to teaching.

"While this gift is made for the general corporate purposes of the board, I should cordially indorse a decision to use the principal, as well as the income, as promptly and largely as may seem wise for the purpose of coöperating with the higher institutions of learning in raising sums specifically devoted to the increase of teachers' salaries."

Since the establishment of the General Education Board in 1902, Mr. Rockefeller has given a total amount of thirty-two million dollars for its use. The interest on this sum is distributed currently, and the Board is empowered to distribute the principal at its discretion.

A Recent Medical Periodical.—During the past year there have been established a number of excellent periodicals devoted to medicine and public health. Among these may be mentioned *Modern Medicine*, edited by Alexander Lambert, M.D.; S. S. Goldwater, M.D.; and John A. Lapp, M.D. Contributors to the latest issue include Professor George C. Whipple of Harvard, Professor Ellsworth Huntington of Yale, David L. Edsall, M.D., Dean of the Harvard Medical School; W. A. Evans, M.D., former health commissioner of Chicago; George W. Crile, M.D., and C. D Selby, M.D.

The School and Public Health Nurse in Arizona.—The value of the school nurse and the public health nurse is recognized in Arizona. The school nurse endeavors to see that the children are cleaner, better fed, and live in more sanitary surroundings, and her work frequently doubles the value of the regular school work. The public health nurse is the real guard against outbreaks of epidemics; she gains the confidence of the women, especially of those in the poorer quarters, and contributes an important element in the creation of a higher standard of citizenship by improving health conditions throughout the state.

Drug Price Changes.—For the week of January 2, the Drug and Chemical Markets reported the following changes in drug prices:

Camphor and quicksilver are lower this week. Quinine has declined ten cents an ounce. Ergot and thymol are higher. The market is active, but buyers limit their purchases to small amounts pending developments after stock-taking. Many essential oils are still advancing, owing to scarcity. Oil of lemon, bitter orange, spearmint, sandal-wood, linalol and oil mirbane are firmer. Oil of caraway, cedar leaf and cloves are easier.

American dyes are sold ahead for several months, and some of the colors are extremely scarce. Many crudes are off the market. Coal-tar intermediates are in heavy demand, and only limited stocks are available.

The vegetable oil markets are quiet. Soya bean and linseed oils are in good demand, and prices are firm. There was more activity in cocoanut oil this week and stocks are said to be limited and prices are advancing.

Caustic soda is scarce, and prices are firm. Bleaching powder is practically off the market. Bichromate of potash is lower. Sulphuric acid prices are very firm, and buyers find it difficult to locate supplies.

Aid for Tubercular German Children.—The American section of the German Red Cross has received the sum of 2,500,000 marks which has been donated by relief committees in the United States for the benefit of tubercular and undernourished children. This will enable more than two thousand children to be benefited by improved climatic and food conditions. Mr. Hoover's plan to coördinate American food relief so far as it concerns the transfer of personal donations from Americans is reported to have been approved by the Germans, and it is believed that it will terminate the abuses resulting from indiscriminate shipments through American forwarding agents. In many instances hitherto, packages have arrived in poor condition, with evidence of a minimum amount of attention given to the selection of food, the manner of packing, and the method of shipment.

Mental Hygiene.—The United States Public Health Service has outlined a program in mental hygiene for coöperating with other national agencies and with state agencies in the development of a rational plan for preventing mental disorders and improving the care to be given to those persons who are affected already. There will be organized a group of persons skilled in mental hygiene, psychiatric courts will be established, and immigrants will be observed carefully as they enter the country. All possible measures will be taken to protect the mental as well as the physical well-being of the nation.

BOSTON AND MASSACHUSETTS.

Week's Death Rate in Boston.—During the week ending Jan. 3, 1920, the number of deaths reported was 253 against 488 last year, with a rate of 16.32 against 31.95 last year. There were 39 deaths under one year of age against 37 last year.

The number of cases of principal reportable diseases were: Diphtheria, 56; scarlet fever, 86; measles, 232; whooping cough, 57; typhoid fever, 1; tuberculosis, 32.

Included in the above were the following cases of non-residents: Diphtheria, 14; scarlet fever, 6; tuberculosis, 6.

Total deaths from these diseases were: Diphtheria, 11; scarlet fever, 1; measles, 1; whooping cough, 3; tuberculosis, 16.

Included in the above were the following non-residents: Diphtheria, 4; scarlet fever, 1; tuberculosis, 4.

Influenza cases, 10.

Massachusetts General Hospital Training School for Nurses.—The graduating exercises of the Training School for Nurses of the Massachusetts General Hospital were held on January 15, 1920, in the Moseley Memorial Building on Fruit Street, Boston. Dean Herbert E. Mills, of Vassar College, delivered an address. The exercises were followed by a reception.

Convention of American Bacteriologists.—At the convention of the Society of American Bacteriologists held recently in Boston and Cambridge, Dr. Charles Krumweide, of the research laboratory of the New York Health Department, was elected president of the Society, in place of Dr. C. S. Prescott of Boston, whose term expired. Dr. F. C. Harrison, president of the MacDonald College in Montreal, was elected vice-president, Dr. A. Parker Hitchens of Indianapolis was reëlected secretary-treasurer and Dr. J. W. M. Bunker was chosen assistant secretary, a new position in the organization. New members of the council are Dr. F. P. Gay, professor of pathology and bacteriology at the University of California, and Dr C. G. Bull, professor of immunology at the Johns Hopkins School of Hygiene in Baltimore. A committee on national research was created, consisting of all the past presidents, with Dr. Bunker as executive secretary and Dr. S. C. Prescott of Boston as chairman.

The opening meeting of the association was held at the Harvard Medical School with about two hundred members present. It was voted to increase the correspondence membership limit to twenty-five so as to include a number of foreign bacteriologists of renown; to present complete files of its journals to Sir Arthur Newsholme and to the universities at Belgrade and at Louvain. The Society voted to provide for the possibilities of the creation of a Western division to include the bacteriologists on the Pacific Coast, affording them an opportunity to coöperate more closely with the Society, and to provide for representation on the National Research Council.

Dr. D. H. Bergey of the University of Pennsylvania addressed the meeting on the subject, "The Teaching of Elementary Systematic Bacteriology"; Professor C. E. A. Winslow of the Yale Medical School presented the final report on "Characterization and Classification."

At the second session of the Society, Dr. Edward Bartow, of the Illinois State Water Survey Board, discussed the bacterial methods of water analysis used with the American Expeditionary Forces. A paper prepared by Dr. W. F. Montfort and Miss Margaret C. Perry of the Illinois State Water Survey Board was read by one of the delegates to the convention. This paper dealt with "some atypical colon-aerogenes forms isolated from natural waters," and was the subject of considerable discussion. An address on "Bacillus Botulinus in Canned Olives," prepared by Dr. R. B. Edmonson, G. G. DeBord, and Charles Thom of the Bureau of Chemistry in Washington, was read. Dr. J. R. Esty of the National Canners' Association discussed "Resistant Bacteria Causing Spoilage in Canned Foods," and Dr. W. D. Bigelow of the same association spoke on "Heat Penetration in Canned Foods."

At the third session, held at the Massachusetts Institute of Technology, the chief topics of discussion were "Human Pathology" and "Immunology." The pathogenesis of lobar pneumonia was discussed by Dr. Francis G. Blake of the Rockefeller Institute, "Routes of Infection of the Lung in Pneumonia" was considered by Dr. George H. Smith of the Yale Medical School, and "What is the Influenza Bacillus?" was discussed by Dr. T. M. Rivers of the Johns Hopkins Hospital. Other addresses included "Flora in Dysentery," by Wilbert C. Davison, M.D.; "The Bacteriology of Chronic Arthritis and Chorea," by John H. Richards, M.D.; and "Diphtheria Toxins," by Dr. Lewis Davis of Detroit and G. H. Robinson, M.D., and P. D. Meader, M.D., of the Baltimore School of Hygiene.

NEW ENGLAND NOTES.

Italian War Relief Fund.—The New England branch of the Italian War Relief Fund has received contributions to the total amount of $318,750.05. There is great need of money to purchase necessities for the suffering people in devastated districts.

Miscellany.

A DISTINGUISHED FRENCH PHYSICIAN.

In the issue of the *Medical Press and Circular* for December 12, 1917, appeared the following account of Broussais, a distinguished French physician, and of his great work, "Doctrine Médicale Généralment Adoptée," published in 1816.

Francois Joseph Victor Broussais, M.D., Knight of the Royal Order of the Legion of Honour, Physician in Chief and First Professor in the Military Hospital of Instruction of Paris, Member of the Royal Academy of Medicine of France, of the Royal Medical Society of Madrid, of the Patriotic Society of Cordoba, Corresponding Member of the Society of Emulation of Liège, of the Medical Societies of Philadelphia, New Orleans, and Louvain, was then forty-four years of age, and had already incurred the enmity of his medical brethren. Even after his death their animosity was unforgiving; the nickname Sangrado that Alain René Le Sage had applied to Helvetius; and the scarcity of leeches in France was ascribed to his "hirudinomania." Born in the little old-fashioned town of Dinan, in Brittany, where he received his general education in the town college, and his first lessons in medicine from his father, who was a physician. In 1789, however, the reported victories of Pichegru and Dumouriez, changed his views, and he enlisted in one of the newly formed Republican regiments as a sergeant, and in 1798, "swung a cutlass as a privateersman," but ill-health necessitated his retirement from active service. He resumed his medical studies and graduated in the University of Paris in 1803. In 1805 he rejoined the Army as a surgeon, and as such served with the troops in Germany, Holland, Italy, and Spain. This period of his life is of the utmost importance to all who desire to form a just opinion of his works and character. Happily he was exact, keeping notes of his cases (no easy task for an army physician during the Napoleonic wars), which are embodied in the English translation of his "History of Chronic Phlegmasiae, or Inflammations," 2 vols., 8vo., which formed the groundwork of his series of lectures, including those on *Enteritis* and *Gastro-enteritis,* lectures which were attended by Pierre Charles Alexandre Louis, and directed his attention to the differentiation of typhoid from typhus fever.

These lectures show Broussais at his best, and explain, if they cannot justify, his belief in the starvation theory of treatment of enteritis and gastro-enteritis. Louis pursued the same post-mortem work which his tutor pronounced to be essential to progress; but the conditions under which he made his investigations were essentially different. He worked in days of profound peace, and without being shackled by a theory. It is excusable, and perhaps necessary, to quote a few passages from Broussais' *"History of Gastritis and Enteritis."* He writes: "Every diarrhoea which is prolonged beyond thirty days may depend upon the disorganization of the internal membrane of the colon; but in most cases it continues only because it is kept up either by medicines or regimen." He approves of Pinal's dietary and medication: "1st, a demulcent regimen, composed of milk and farinaceous substances, and rendered more nourishing in proportion to returning health; 2nd, by mild laxatives, given from time to time; by astringent tonics, given at intervals, associated with sedatives; 4th, by dry air, moderate exercise, the use of generous wine, and tepid baths." A course of treatment in no way resembling the Sangrado practice, which so terrified Gil Blais. The sparse dietary enjoined by Broussais was not absolute, but conditioned on the food procurable, and was justified by results. His conclusions on this subject were based on many autopsies. The following extract from "Chronic Phlegmasiae" are, in this connection, interesting: "In Friuli, the dysenteries were more violent in the same patients than in Holland or Germany. In Istria and Dalmatia they acquired a still higher degree of activity, still in the same patients. Dysentery made the greatest ravages in such of our regiments, as leaving the cold mountains of Carinthia, were sent to Capo d'Istri, or into Dalmatia. The mortality was so great, for some time, that this dysentery might have been thought quite different from that we treated at Udine; nevertheless, it was the same in character. . . . . . . I conclude from this, first, that the phlogosis was oftener in its highest degree of intensity in these countries than in those in which I practiced medicine.'' And he gives the experience of M. Chabert, surgeon to the army of Italy, ''who saw (in Dalmatia) a small regimental hospital, where dysentery was combated by nothing but rice-water or the solution of gum-arabic. Fatal terminations were rare, whilst patients from the same corps, who entered the (military) hospitals, most frequently perished.'' Commenting on this, he writes: ''But it is not the less true, that the emollient (dietetic) treatment, being from my experience that which abridges dysenteries in the greatest degree.'' Under the heading ''General History of Phlogoses of the Mucous Membrane of the Digestive Passages,'' he develops his theory. A theory readily accepted of the people; bitterly opposed by his professional brethren; and ultimately universally adopted. The theory was a half-truth, difficult to refute; based, as its author believed, on irrefutable facts; and it has the merit of substituting the affected organ for a hazy concept. The conclusions were drawn from an immense mass of pathological material; but the conclusion had to be drawn quickly and acted on promptly. Napoleon's marshals were not men to brook delay; nor would Broussais have filled in the armies of France, a position of physician second only to that of Dominque Jean Larry, ''Surgeon-General of the Armies of France.'' The effects of his early training in the arms were noticeable throughout his life. This old militare, Holmes writes, scolded, bullied, and wrangled with the vigour of Paracelsus; and, we may add, with the success of Knox.

Davy, in his latter years, said, ''his greatest discovery was Faraday.'' So we may say of Broussais, ''his greatest discovery was Louis;'' and it is to the credit of Louis that he recognized the fact, when he was demolishing the theory of ''Irritation,'' in his immortal work, ''Anatomical, Pathological, and Therapeutic Researches upon the Disease known under the name of Gastro-Enterite, Putrid, Adynamie, Ataxie, or Typhoid Fever, etc., compared with the Common Acute Diseases.'' The opening sentence of which refers to the anatomical and physiological labours of his former master and friend: ''Continued fevers (the typhoid affection) have attracted the attention of physicians of all ages; they may be said to have engrossed it of late, and, it was natural to anticipate, the questions relative to the seat and nature of fevers have been examined by many individuals. Some authors, satisfied with the facts collected by the ancients, have thought that they afforded sufficient proof of the truth of their doctrines; others, relying on observations recently made . . . have viewed fever as a simple gastro-enteritis.''

By referring to the list of honours bestowed, it may be easily seen that almost one and all of them were conferred on Broussais after the Restoration, and that with the approval and sympathy of all classes of Frenchmen, which continued unabated until his death in 1838.''

HENRY VIIITH AS A PATRON OF MEDICINE.

In the issue of the *Medical Press and Circular* for May 22, 1918, is an article by Dr. Howard B. King of New Orleans, reprinted from the *New York Medical Journal*, describing Henry VIIIth as a broad-minded, just, and sagacious monarch, who, in spite of his great vanity, brutal and vicious desires, sensual tastes, and selfish and fickle religion, was a most liberal and progressive patron of medical science, and was really the originator of the movement which led to the foundation of army and navy medical departments.

''On ascending the English throne in 1509 Henry VIII found the practice of medicine in a chaotic state. There were physicians and apothecaries, master surgeons and barbers, quacks, male and female, all practising medicine in a loose and haphazard fashion. The physicians of the day included a host of empirics and charlatans as well as travelled scholars and men of refined science. The first reform in medicine attempted by Henry was a complete reorganization of the medical service of the English naval forces. Before his reign England possessed nothing worthy of the name of navy. When this great monarch grasped the idea that the power of his kingdom would be best shown in the character of his navy, he laid his plans according to precedent with regard to manning the ships built in his dockyards by Italian shiprights. Until Henry ascended the throne that which best deserved the title of a fighting navy was the flotilla of the Cinque Ports, which rose to importance under the later Saxon kings and Plantagenets. The reign of Edward III, marked by constant warring for the throne of France, brought about a demand for fuller naval organization, which included every seaport of the kingdom. Then the merchant marine of England was impressed for the king's service to transport soldiers, arms and stores to France, and many great sea fights are noted, as that of Sluys, which opened France to the invaders in 1340; Winchelsea, which freed the English coast towns from hostile raids in 1340, and Rochelle, shortly before the retirement of the English army from France in 1372. To be strictly accurate, however, these engagements were fought by land forces embarked in ships which were simply laid alongside the enemy by the mariners. In the Wars of the Roses there was but small need for a navy, but Edward IV prepared for an incursion of France by the same means as Edward III. Edward IV, however, possessed ships of his own, which in peaceful intervals he hired out to traders in much the same manner as did the state of Venice, whose great carricks were frequent visitors of the English and Flemish ports. It is worthy of observation that these Italian craft carried surgeons and a physician as early as 1320. As a surgeon was an absolute necessity during peace times, the same condition obtained during the time of war. That master surgeons accompanied the admiral of the Italian fleet at a very early date may be gleaned from the following: In the library of the Doria Palace at Genoa is a manuscript bearing the date of 1337, wherein is contained an agreement or indenture between Philip de Valois and Anton d'Ovia to furnish forty Genoese galleys, each manned by 210 seamen, among whom there was to be a *barbiero* and a *barbieroto,* or a surgeon and his mate; in addition to which it was specially agreed that the admiral should have with him a *maestro di cirurgia* of his own country.

To the really scientific men of the medical profession Henry granted collegiate rights with power to issue licenses to practise medicine and surgery, and to inspect all shops where drugs were stored and sold, which brought the apothecaries legally under their collegiate control and gave them the power, if so moved, to combine the science and art of surgery with the practice of medicine. The surgeons were master surgeons, whose social and professional position rested on their ability, and barbers, who united the practice of minor surgery with a meaner calling, and they alone possessed corporate rights. Henry VIII amalgamated these into one corporate body styled barber surgeons. Apothecaries were members of the City Company of Spicers, now the Grocers, who then imported the drugs of the Levant. Henry placed them under the control of the physicians. These reforms were begun in 1512 by placing the practice of physics and surgery under ecclesiastical surveillance. At that time it was ordained that all medical practitioners, except those having degrees from Oxford and Cambridge, should be examined by the clergy, assisted by medical graduates or surgical experts in each branch respectively. In the fifth year of Henry's reign, 1513, it was enacted that all barber surgeons should be exempted, as in time out of mind, from bearing arms, and should also be accorded the same privileges as heralds. This exemption, however, was not accorded to the physicians.

In the tenth year of his reign, 1518, he gave to the Royal College of Physicians its first charter. Cardinal Wolsey had much to do with this act of incorporation. This charter meant self-government for the medical profession. Five years later this charter was affirmed by an Act of Parliament. Truly, this must be considered as the act of emancipation of medicine from that Church which had leagued it with astrology and the occult sciences and had degraded surgery to the lowest point.

The need for cultivation of anatomical knowledge was recognized in 1538 by an Act of Parliament legalizing dissection at the Hall of the Barbers. Within the next two years the barbers were incorporated under the name of the Barber Surgeons Company of London, and authorized to pursue the study of anatomy through dissection, in face of the most violent opposition by the Church. To stimulate and encourage the students of anatomy it was enacted that the company "may take annually the corpse of four condemned fellows put to death, to make incision for the better and further knowledge of surgery." It also meant the separation of true surgery from the art of the barber, but enacting that no barber should practise surgery, except the letting of blood and drawing of teeth, and that no surgeon should exercise shaving or other work peculiar to barbers. On the petition of Sir John Gresham, lord mayor, Henry gave in 1547 the building of the dissolved Priory of Canons to the City of London in order that it might be converted into a hospital for lunatics. The great madhouse was known as Bedlam, and was situated in Moorfields, on the south side of what is now Finsbury Square. That Henry VIII should have been so active in medical reforms while engaged in a bitter controversy with the Church of Rome shows him to have been a leader of no ordinary qualities. It was through his efforts that medicine was divorced from the Church. The renaissance of scientific and rational medicine had its origin in the reign of Henry VIII, and it cannot be doubted that this monarch's break with the Church marks an epoch in medical progress.

EXAMINATIONS FOR APPOINTMENT IN THE MEDICAL CORPS OF THE REGULAR ARMY.

The Surgeon-General of the Army announces that preliminary examinations of all eligible applicants for appointment in the Medical Corps, U. S. Army (regular) will be held on March 15, 1920, at various points throughout the United States, in the Philippine Islands, Hawaiian Islands, Panama Canal Zone, Porto Rico, and in France, Germany, and Siberia, of applicants in the military service.

The essential requirements for eligibility to take the examination are that the applicant shall be a citizen of the United States, of good moral character and habits, between twenty-two and thirty-two years of age, a graduate of a medical school legally authorized to confer the degree of Doctor of Medicine, and shall have had at least one year's post-graduate hospital interneship.

The requirement that an applicant for appointment in the Regular Medical Corps shall have served at least a year's post-graduate hospital interneship, is waived in the cases of those applicants who have satisfactorily served as commissioned officers for a period of at least one year during the World War.

The Government cannot pay any portion of an applicant's expenses incurred in connection with the examination, and in designating the places of examination, due consideration will, therefore, be given to localities from which applications are received, in order to lessen such expenses as far as possible.

The examination will be both physical and professional. The physical examination will be thorough. Candidates who fall below 64 inches in height will be rejected. Each candidate must certify that he labors under no physical deformity or disability which can interfere with the efficient discharge of any duty which may be required. Errors of refraction, if vision is not below 20/100 in either eye, are not causes for rejection, provided they are not accompanied by ocular disease and are entirely corrected by appropriate glasses.

Physical Proportions for Height, Weight, and Chest Measurement.

Height 64 inches, weight 128 lbs., chest measurement at expiration 32 in., mobility 2 in.

Height 65 inches, weight 130 lbs., chest measurement at expiration 32 in., mobility 2 in.

Height 66 inches, weight 132, lbs. Chest measurement at expiration 32½ in., mobility 2 in.

Height 67 inches, weight 134 lbs., chest measurement at expiration 33 in., mobility 2 in.

Height 68 inches, weight 141 lbs., chest measurement at expiration 33¼ in., mobility 2½ in.

Height 69 inches, weight 148 lbs., chest measurement at expiration 33½ in., mobility 2½ in.

Height 70 inches, weight 155 lbs., chest measurement at expiration 34 in., mobility, 2½ in.

Height 71 inches weight 162 lbs., chest measurement at expiration 34¼ in., mobility 2½ in.

Height 72 inches, weight 169 lbs., chest measurement at expiration 34¾ in., mobility 3 in.

Height 73 inches, weight 176 lbs., chest measurement at expiration 35¼ in., mobility 3 in.

It is not necessary that the applicant should conform exactly to the figures indicated in the foregoing table. The following variations below standard given in the table are permissible when the applicant is active, has firm muscles, and is evidently vigorous and healthy:

Height 64 in. and under 68 in., chest at expiration 2 in., weight 8 lbs.

Height 68 in. and under 69 in., chest at expiration, 2 in., weight 12 lbs.

Height 69 in. and under 70 in., chest at expiration 2 in., weight 15 lbs.

Height 70 in. and upward, chest at expiration 2 in., weight 20 lbs.

The professional examination will be a written one and will embrace the following subjects: Anatomy, physiology and histology, materia medica and therapeutics, surgery, practice of medicine, obstetrics and gynecology. The minimum passing mark is 80 per cent.

The Medical Corps consists of commissioned officers in number approximately equal to seven for every one thousand of the total number enlisted strength of the Regular Army as authorized from time to time by law, proportionally distributed among the grades and in the ratios as follows: Colonels, 3.16 per cent.; lieutenant-colonels 5.42 per cent.; majors, 23.7 per cent; captains and first lieutenants, 67.72 per cent.; and two brigadier-generals in addition to the Surgeon-General who holds commission in the grade of major-general.

Original appointments are, as required by law, made in the grade of first lieutenant and while at the present time it is necessary that a first lieutenant serve in that grade for five years before promotion to the grade of captain, legislation has been recommended that the period be reduced to three years. Promotions to the higher grades are made as vacancies occur and all promotions are subject to examination.

To each rank is attached a fixed annual salary which is received in monthly payments and this is increased 10 per cent. for each period of five years' service until the maximum of 40 per cent. is reached. At the present time a first lieutenant receives $2,000 per annum or $166.66 monthly; at the end of five years he receives the pay of a captain, $2,400, with an increase of 10 per cent. after five years' service, making $2,640, or $220 per month. After 10 years' service the pay would be $2,880 annually, or $240 per month. The pay attached to the rank of major is $3,000 a year, which, with 10 per cent. added for each five years' service becomes $3,600 after 10 years' service, $3,900 after 15 years' service, and $4,000 after 20 years. The maximum monthly pay of lieutenant-colonel, colonel, and brigadier-general is $375, $416.66, and $500, respectively. Officers, in addition to their pay proper, are furnished with allowance of quarters according to rank, either in kind, or where no suitable Government building is available, by commutation; fuel and light therefor are also provided. When traveling on duty an officer receives mileage for the distance traveled, including the travel performed in joining first station after appointment as first lieutenant. On change of station he is entitled to transportation for professional books and papers and reasonable amount of baggage at Government expense. Groceries and other articles may be purchased from the commissary at about wholesale cost price. Instruments and appliances are furnished for the use of medical officers in the performance of their duties. Well-selected professional libraries are supplied to each hospital, and standard modern publications on medical and surgical subjects, including medical journals, are added from time to time. At each military post there is also a laboratory, and medical officers are encouraged to carry on any special line of professional study which appeals to them and which fits them for their duties as medical officers.

The Medical Department is operating a number of large general hospitals which offer exceptional advantages to medical officers, whose detail to duty in these institutions is made as the exigencies of the service permit so as to afford opportunity for purely professional work along the line of general medical and surgical service as well as the specialties.

Officers of the Medical Corps are entitled to the privilege of retirement after 40 years' service, or at any time for disability incurred in the line of duty. On attaining the age of 64, they are placed on the retired list by operation of law. Retired officers receive three-fourths of the pay of their grade (salary and increase) at the time of retirement.

While the present maximum age limit for appointment in the permanent Medical Corps is fixed at thirty-two years, it is believed probable that by prospective legislation that limit may be modified somewhat in the cases of those applicants who have had military service during the World War, and who are beyond the present age limit. Any such person may, therefore, submit application regardless of his present age, in order that he may be given opportunity for examination, should the suggested change be made prior to March 15, 1920.

Applications should be made in letter form, addressed directly to the Surgeon General, United States Army, Washington, D.C., and should have embodied therein the following data in the order indicated:

a. Name in full (Initials not acceptable).

b. Date of birth.

c. Place of birth.

d. Permanent home address.

e. Medical school or schools from which graduated, with date.

f. Professional experience.

g. If an officer who has served during the emergency,—complete statement of military service, setting forth (1) the organizations in which served and inclusive dates, (2) present organization if still in service, (3) grade in which originally appointed, (4) present grade if still in the service, (5) date, place of discharge and rank at time of discharge if no longer in the service.

h. Statement of any service as a contract surgeon in the Medical Reserve Corps, in the Medical Section, Officers' Reserve Corps, or in the Medical Service in Volunteers.

i. In cases of alien birth, (1) documentary evidence of naturalization, (2) if naturalized through parent, documentary evidence of father's naturalization and sworn statements from two reputable United States citizens establishing relationship between candidate and his father.

Approved applicants will receive an invitation from the Surgeon General, United States Army, to report to the examining board convened at the point nearest to their homes.

At the present time there are, approximately, seven hundred and thirty vacancies in the Medical Corps.

M. W. Ireland,
Surgeon General, U. S. Army.

NOTICES.

City of Boston Health Department.
January 13, 1920.

To Whom it May Concern:—

By the provisions of Chapter 195, Acts of 1919, approved May 29, 1919, all day nurseries operating in cities and towns in the Commonwealth of Massachusetts are required to obtain a license from the local board of health in order to conduct such a day nursery. The Act also provides that the local board of health shall make rules and regulations in accordance with which day nurseries shall be licensed and conducted, and before adopting such rules and regulations the Health Commissioner has arranged to hold a hearing at which persons interested in day nurseries may appear and be heard.

This hearing has been arranged for Wednesday, Jan. 21, 1920, at 2 p.m., in the office of the Health Commissioner, Room 1109A, City Hall Annex, Boston, and you are respectfully invited to attend or to be represented. S. L. Moloney, *Secretary.*

The Mary Putman Jacobi Fellowship.—The Women's Medical Association of New York City offers the Mary Putman Jacobi Fellowship of $800, available for post-graduate study. It is open to any woman physician for work in any of the medical sciences.

The fellowship will not be awarded by competitive examination, but upon proof of ability and promise of success in the chosen line of work.

Applications for the year 1920-1921 must be in the hands of the Committee on Award by April 1, 1920, and must be accompanied by:

1. Testimonials as to thoroughly good health.
2. Letters as to ability and character.
3. A detailed account of educational qualifications.
4. A statement of the work in which the applicant proposes to engage while holding the fellowship.
5. Examples, if any, of her work, in the form of articles or accounts of investigations which she has carried out.

Two reports will be expected from the holder of the fellowship, one to be presented about the middle of the work and a detailed report for publication upon its completion.

All applications for this fellowship shall be forwarded to the Secretary.

Angenette Parry, M.D., *Chairman*
Annie S. Daniel, M.D.
Martha Wollstein, M.D.
Helen Baldwin, M.D.
Eleanor Tomes, M.D.
Rose Cohen, M.D., *Secretary*
151 West 78th St., New York City.

SOCIETY NOTICE.

The Norfolk District Medical Society.—A regular meeting of the Society will be held at Masonic Temple, 171 Warren Street, Roxbury, Tuesday, January 27, 8.15 p.m. Telephone Roxbury 56089.

Business.

Communication: "Nature and Treatment of Traumatic Shock," by Walter B. Cannon, M.D.

Bradford Kent, *Secretary.*

The Massachusetts Medical Society

TO THOSE WHO PLAN TO ATTEND THE MEETING OF THE AMERICAN MEDICAL ASSOCIATION AT NEW ORLEANS, APRIL 26-30.

In response to a letter from the Secretary of the American Medical Association containing the enclosed clipping from the *Journal* of that Association, the Secretary of the Massachusetts Medical Society would be glad to hear from those Fellows who are planning to attend the New Orleans session, with a view to arranging transportation by boat.

Walter L. Burrage, *Secretary.*

42 Eliot Street, Jamaica Plain, Boston, 30,
January 22, 1920.

To New Orleans by Boat.

> Inquiries received from various parts of the country indicate that a number of physicians would like to make the trip to New Orleans by boat. These prompt the suggestion that physicians conveniently near the Atlantic seaboard and Gulf ports, as well as those at different points along the Mississippi and Ohio rivers, might arrange boat parties which should provide a pleasant and restful journey. It has been suggested further that if boats were chartered to go to New Orleans from different points and were docked there, these "houseboat parties" would provide cool and delightful quarters for those who prefer to stay on the boats during the session.

RECENT DEATH.

Dr. S. J. Cronin, of Roxbury, died recently at the Peter Bent Brigham Hospital as a result of blood poisoning in his left hand.

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THE CALORIE AS A UNIT IN FIGURING MILK MODIFICATIONS.

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It is often of interest, though less often of practical use, to consider new ways of attacking old problems, even when the established methods are satisfactory. Many different procedures for calculating and modifying infants' diets are in use, each of which doubtless has something to recommend it, and many more have been suggested and discarded. The plan of feeding which I am about to outline will probably never be put into practical use, and yet it may serve some purpose in calling attention to certain aspects of infant feeding of which little notice so far has been taken.

The use of the calorie in infant feeding is, of course, by no means a new idea. But the so-called "caloric" method of feeding, as usually practiced, takes account of the total fuel value of the mixture only, without inquiring very deeply into the relative proportions of the various food elements which it contains; and it has been shown repeatedly how important variations in the percentage composition of mixtures may be. Moreover, the total fuel value of a mixture gives us very little idea of its suitability for a given sick baby, and guided by the total caloric value alone, it is often difficult to adjust the food exactly to fit the needs of the case. The "percentage" method, probably the most satisfactory now in use, does permit a close adjustment to the needs of the individual baby; but some practitioners find it rather difficult to manage the calculations required, and to get from them a concrete idea of the amount of food that is being given.

Neither of these methods at all resembles that used in the calculation of dietaries for adults. In figuring the amount and kind of food to be allowed to a typhoid fever patient, a nephritic, or a diabetic, we deal in terms of the weight and caloric value of the separate food elements, instead of in terms of percentage and quantity, or of total caloric value alone. It is my purpose to show that a variation of this method is as rational and simple as the methods in use for feeding infants, and to indicate how it might easily be extended to milk modifications.

As none of the ingredients of infants' foods, as usually prepared, are weighed, it will probably be simpler to deal with them chiefly in terms of calories. The use of the calorie instead of the gram or ounce in calculation would have the further advantage that the food elements would all be reduced to a common unit, namely, the fundamental one of heat value; while at the same time the proportionate composition would be considered.

Such a method of calculation would tend, I believe, to clarify our methods of thinking on the subject of infant feeding, in that it would focus our attention upon what are, after all, the essential points in any diet: the nutrient value of the daily allowance, and also its distribution among the various food elements. If, using the "percentage" method, we say that a certain baby is to have thirty-two ounces of a 3% fat, 6% sugar, 2% protein mixture, we have to multiply each of these percentages by 32 and divide by 100 to get any concrete picture of what the food contains. But even the weights of the various elements are not an expression of the energy which the infant will receive from the food; to determine this, we must multiply our weights by their respective caloric coefficients. There are short cuts, of course, for each of these manoeuvres, but they introduce inaccuracies and tend to obscure the meaning of the procedures. Needless to say, the practitioner seldom takes these steps; he has trained himself to feel, often perhaps rather empirically, that about such and such a modification is suitable for an infant of about such an age and weight, and that if symptoms of indigestion occur, such an element should be cut down by about so much. If, however, the various constituents of the diet had been calculated in calories in the first place, it would probably be easier for him to apply his knowledge of nutritional physiology to the calculation or correction of the diet.

Moreover, the calculation of the food content of a mixture alone, separate from the fluid volume in which it is given, would enable us more easily to investigate the importance of variations in the latter; a subject which receives scant attention in most textbooks. The indications for increasing the percentage of protein, or decreasing that of fat, are thoroughly discussed by many authors, but when to give a thirty-two ounce mixture of 1% fat, 4% sugar, and 2% protein, instead of twenty ounces of 1.5% fat, 6% sugar, and 3% protein is seldom mentioned. A considerable field for research would be opened, and its results easily applied.

The calculation and alteration of prescriptions would, in addition, be somewhat simplified by the fact that we should use but one unit for both solids and liquids. Thus, it would not be necessary to remember that a tablespoonful of milk sugar weighs about half an ounce, and will add a certain percentage to each different volume of mixture, but merely that it contains fifty-seven calories, to be added to our total whatever it may be.

A further advantage would be that we should be able to continue the calculation of the diet throughout infancy and into childhood, whenever desirable, with little extra trouble. Such foods as bread, the cereals, and simple meats could be introduced into the diet list in measured quantities, and the proportions of the various food elements manipulated with much greater ease and certainty than is now possible.

For ordinary clinical purposes, it is probably accurate enough to use caloric values corresponding to the percentages now in general use in home modifications; that is, to assume that skim milk contains no fat, while gravity cream contains sixteen per cent., and so on. The constituent caloric values of the ingredients most commonly used in milk mixtures are given in Tables I and II.

TABLE I.* CONSTITUENT CALORIC VALUES OF VARIOUS MATERIALS.

	FAT cal.	CARBOHYDRATE cal.	PROTEIN cal.	TOTAL cal.
1 oz of, contains				
Human milk	11.0	7.9	1.8	20.7
Whole cow's milk ..	11.0	5.0	3.9	19.9
Gravity cream (16%)	44.0	5.0	3.9	52.9
Skim milk	0	5.0	3.9	8.9
Whey	0	5.0	1.1	6.1
3% barley water	0	3.7	0	3.7
Milk sugar†	0	57.0	0	57.0
Milk sugar‡	0	36.0	0	36.0

* Calculated from data given in Morse, J. L., and Talbot, F. B.: Diseases of Nutrition and Infant Feeding, New York, 1916.

† Rounded tablespoonful. ‡ Level tablespoonful.

TABLE II.§ CONSTITUENT CALORIC VALUES OF TOP MILKS.

This table shows the calories of fat in one ounce of the various top milks of a quart of cow's milk. The caloric values of the other constituents are always the same, namely, Sugar, 5.0 calories; Protein, 3.9 calories per ounce.

TOP	contain	FAT	TOP	contain	FAT
2 oz.	....	6.6 cal.	14 oz.	....	2.2 cal.
3 "	....	6.2 "	16 "	....	1.9 "
4 "	....	5.9 "	18 "	....	1.7 "
5 "	....	5.3 "	20 "	....	1.6 "
6 "	....	4.7 "	22 "	....	1.5 "
7 "	....	4.2 "	24 "	....	1.4 "
8 "	....	3.7 "	26 "	....	1.3 "
9 "	....	3.5 "	28 "	....	1.25 "
10 "	....	2.9 "	30 "	....	1.2 "
12 "	....	2.5 "			

§ Calculated from data given by Morse and Talbot, after Chapin and Pisek, Diseases of Children, 1909.

METHOD OF CALCULATING ANY DESIRED MIXTURE.

The calculation of home modifications is more complicated than in the original "caloric" method, but somewhat simpler than that used in the "percentage" method. Suppose it is desired to make up a mixture containing 355 calories of fat, 260 of sugar, and 70 of protein, in 32 ounces. This would correspond to a 32-ounce mixture of 4% fat, 7% sugar, 1.75% protein, in the "percentage" system. But in order to compute the prescription, we divide 355 by the fat calories of one ounce of cream, as given in Table I:

$355/44 = 8$ oz. cream

8 oz. gravity cream contains—fat, 352 cal.; sugar, 40 cal.; protein, 31 cal.

So $70 - 31 = 39$ calories of protein must be added in the skim milk.

$39/3.8 = 10$ oz. skim milk

10 oz. skim milk contains—fat, 0 cal.; sugar, 50 cal.; protein, 39 cal.

170 calories of milk sugar must then be added; this number divided by 57 gives the number of rounded tablespoonfuls required—3.

Finally, water is added up to 32 oz., the volume required.

Another path to the same end would be to ascertain the proportion between the fat-calories and the protein-calories in our formula by forming the equation:

(355 : (70) = (fat-calories of 1 oz. of the required top-milk) : (3.9, the protein-calories of 1 oz. of any milk.)

From Table II, we see that the mixed top 16 oz. of a quart of ordinary milk will contain the right proportions of these two elements. Of such top-milk, $355/19 = 19$ oz. must be taken; so the top-milk of a second quart must be drawn upon. These 19 oz. will contain 95 calories of sugar, so about three rounded tablespoonfuls of milk sugar must be added, and the amount made up to volume.

The calculation of the caloric constituents of any mixture already in use is also extremely simple. The caloric values of the various food elements in each of the ingredients are simply multiplied out, and added in turn. Alterations in the amount of any of the constituents without changing the others, or in the volume of liquid, without changing the food value, is also facilitated. All these procedures lend themselves perfectly to calculation by the slide-rule; or some such simple tables as Tables III and IV may be used. The amount of cream required to give the necessary calories of fat is looked up in Table III. To find the necessary amount of skim milk, this value is subtracted from the total milk and cream shown in Table IV to correspond with the calories of protein required. The calories of sugar thus obtained are subtracted from the amount of sugar required, and divided by 57 to find the number of tablespoonfuls of dry sugar to be added. All of this is much simpler, in practice, than it sounds.

Table III. Fat-Calories in Gravity Cream.

Amount of Cream	To Add Fat-Calories	Amount of Cream	To Add Fat-Calories
1 oz.	44	10 oz.	440
2 "	88	11 "	484
3 "	132	12 "	528
4 "	176	13 "	572
5 "	220	14 "	616
6 "	264	15 "	660
7 "	308	16 "	704
8 "	352	17 "	748
9 "	396	18 "	792

Table IV. Calories of Sugar and Protein in Milk and Cream.

Volume oz.	Sugar cal.	Protein cal.	Volume oz.	Sugar cal.	Protein cal.	Volume oz.	Sugar cal.	Protein cal.
2	10	7.8	18	90	70.2	34	170	129.6
3	15	11.7	19	95	74.1	35	175	133.5
4	20	15.6	20	100	78.0	36	180	137.4
5	25	19.5	21	105	81.9	37	185	141.3
6	30	23.4	22	110	85.8	38	190	145.2
7	35	27.3	23	115	89.7	39	195	149.1
8	40	31.2	24	120	93.6	40	200	153.0
9	45	34.9	25	125	97.5	41	205	156.9
10	50	39.0	26	130	101.4	42	210	170.8
11	55	42.5	27	135	105.3	43	215	174.7
12	60	46.8	28	140	109.2	44	220	178.6
13	65	50.7	29	145	113.1	45	225	182.5
14	70	54.6	30	150	114.0	46	230	186.4
15	75	58.5	31	155	117.9	47	235	190.3
16	80	62.4	32	160	121.8	48	240	194.2
17	85	66.3	33	165	125.7			

To use such a method as the one outlined above, it would be necessary to develop a new way of thinking of infant feeding. Especially in beginning a diet, we should have to learn to guess the amount of the various food elements, not the volume of a mixture as at present, which should first be tried. Table V is calculated from data given by a standard text-book, indicating a rational trial diet for infants of various ages. Once established, the diet would be modified to suit the particular baby, just as at present in the "percentage" system, except that the changes, like the original formula, would be calculated in calories.

TABLE V.* TRIAL FORMULAS FOR AVERAGE WELL BABIES.

	FAT cal.	SUGAR cal.	PROTEIN cal.	TOTAL CALORIES cal.	VOLUME DAILY oz.
First food..	28	57	6	91	10
First week	90	110	15	215	16
1 month ..	177	157	25	359	20
2 months ..	230	190	44	464	24
4 " ..	355	260	70	625	32
6 " ..	400	285	90	775	36
8 " ..	465	330	130	825	42

* Calculated from data given in Morse, J. L., and Talbot, F. B.. Diseases of Nutrition and Infant Feeding, New York, 1916.

CONCLUSIONS.

1. The method of calculating milk modifications according to the absolute caloric values of the respective food elements is as rational as the present methods of calculation by percentage composition and volume, or by total caloric value.

2. The use of the calorie as a unit in expressing the composition of milks is of advantage, in that all food elements are reduced to a common standard

3. Such a view of the infants' diet might lead to a clearer comprehension of the subject by some practitioners.

4. It would allow of easy manipulation of the fluid volume apart from the food value, of various mixtures; and might lead to the accumulation of more data concerning the effects of alterations in fluid volume.

5. It would facilitate the extension of the calculation of the diet into late infancy, when desirable.

6. The calculation of modifications would be simpler in many ways, and more easily understood, than under many of the present systems. Alterations of one constituent without changing the others would be particularly simplified.

7. But the possible advantages gained by such a method of calculation are probably scarcely sufficient to warrant its adoption in place of the present well-tried and well-known procedures.

AN EXPERIENCE WITH THE SCHICK TEST AND TOXIN-ANTITOXIN AND A PLEA FOR THEIR USE IN THE EXTINCTION OF DIPHTHERIA.

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In June, 1915, there occurred an outbreak of diphtheria at the State Industrial School for Boys in Shirley, Mass. The usual method of taking cultures of the inmates of the infected cottages, quarantine of all persons having positive throats, and passive immunization of the inhabitants of the school proved successful for a time, but did not permanently eradicate the disease, as the occasional appearance of new cases of a mild type showed.

The lack of modern hospital facilities and the intimate relation of the inmates of the school made the establishment of an effective quarantine very difficult. The taking of mass cultures was practised to such an extent that within a year more than 10,000 combined nose and throat cultures had been taken and the anti-toxin was administered to the 250 inmates at monthly intervals.

In spite of the strictest quarantine obtainable, and the above mentioned prophylactic measure, we had occasional clinical cases, and carriers were constantly present in the school. An interesting feature in connection with this condition was noted that a great many cases that were diagnosed bacteriologically as positive proved negative by virulence test. Whether these were cases of "Hoffman Bacillus" or an attenuated non-virulent Klebs-Loeffler bacillus is an interesting question. The fact, however, that so many of this type were found among patients who had been chronic carriers not only indicated that the latter conclusion was correct, but made the matter of the continued taking of cultures questionable.

It was suggested by the officials of the State Health Department that by communicating with the New York City Department of Health we might be able to obtain toxin-antitoxin for active immunization. The New York City Health Department very kindly agreed to furnish us the required material upon condition that we would administer it only to boys having positive Schick reaction. The Schick test, it may be explained, is a test obtained by injecting intracutaneously, *i.e.,* between the layers of the skin, one-fifteenth of the minimum lethal dose for the guinea pig of diphtheria toxin. If the person injected has no natural or acquired antitoxin in his tissues there appears in from 24 to 48 hours a small localized, sharply circumscribed area of redness which persists for from seven to ten days, leaving a pigmented area or brown spot which in some cases remains indefinitely and usually desquamates in small scales, and in all cases persists in proportion to the severity of the reaction.

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* Read before the Massachusetts Association of Boards of Health, in October, 1919.

In some cases, most often among natural immunes and among those who have been immunized with toxin-antitoxin, a reaction occurs which is known as a pseudo-Schick reaction. This reaction is more pronounced, appears earlier, and is more diffuse and darker in color than the true reaction. The pseudo-reaction consists of a dusky red spot larger than the true reaction and surrounded by a secondary areola which is not sharply circumscribed but fades into surrounding normal skin and usually disappears in from 48 to 72 hours, seldom leaving pigmentation or scaling.

Both true and pseudo reactions ofttimes occur in the same individual, the diagnosis being made by the persistence of the true reaction and the resulting pigmentation and desquamation.

The technique of the Schick test is described by the Massachusetts State Department of Health as follows:

"It is all important that the test be made properly. Inject 1/10 cc. of the diluted toxin (representing 1/50 of the minimum lethal dose for a 250-gram guinea pig) intracutaneously, *not subcutaneously.*

A definite wheal-like elevation in the skin, and movable with it, shows that the injection is properly made. A good 1 cc. syringe with a fine needle is essential."

After a little practice the test can be quickly given to a large number of persons. It is absolutely harmless and gives no constitutional reaction whatsoever.

The writer finds that in his experience the Schick test not only gives us a means of distinguishing immune from susceptible persons, but it enables us to predict with reasonable certainty the comparative severity of cases of diphtheria in different susceptible persons.

To comply with the wishes of Dr. Abraham Zingher of the New York City Health Department the Schick test was given to all our inmates with the following results: Number given Schick test, 257; positive, 148; negative, 109. The ages of these patients range from 15 to 21 years. The susceptible ones were then given three doses each of 1 cc. of toxin-antitoxin at intervals of seven days.

In only about 33% of those injected was there any general reaction and in a much smaller number some slight local reaction. The constitutional symptoms varied all the way from a slight malaise to fever (100 to 103 F), frontal headache, muscular pains and nausea with vomiting. In the most severe cases all disagreeable symptoms appeared in about 18 hours and had disappeared before the expiration of 48 hours. I wish to say in passing that during the past two years, I have used the preparation made in the Massachusetts Health Department laboratories and I am pleased to record that from their use there is scarcely ever any of the after effects just described. The toxin antitoxin prepared by the Massachusetts Department of Health is issued in hermetically sealed glass ampoules each containing 1 cc. or enough for one dose of the preparation.

The general disturbance was much less after the second dose and almost nil after the final injection. Two months later, all the boys given the toxin antitoxin were given a second Schick test. Out of the 98 only 28 showed a slight reaction after 72 hours and 13 showed a very slight pigmentation at the end of one week. Three months after the immunization 94 of the boys who were positive when given the first dose were again given the Schick test.

The reason for not giving the Schick test to the whole number of positive cases at this time was because in the meantime several of the boys had been released on parole from the school. At the end of 72 hours, only six showed a slight reaction, and at the end of one week, six showed a slight pigmentation at the sight of injection. Seventy-two gave pseudo-reaction, which disappeared after the first 72 hours and left no pigmentation.

Two boys became ill with diphtheria after receiving two injections of the toxin antitoxin, and before receiving the third. One boy contracted diphtheria the day following his last injection. These cases were treated with ordinary diphtheria antitoxin and recovered promptly.

We have now been using this means of immunization for nearly four years and during the past year have not attempted to classify immunes from non-immunes but have given every new inmate the toxin antitoxin. One reason for not using the Schick test at this time was the saving of time in the immunization of new boys, as the large number of new commitments has been so constant it was deemed safer for the welfare of the school population to begin the immunization at once without waiting for the result of a Schick test.

As, since using the product of our Massachusetts laboratories, we have had very little constitutional reaction and at no time any anaphylactic symptoms, it was deemed by the writer a wiser course immediately to inject every new boy with the toxin antitoxin in order to shorten as much as possible his period of susceptibility.

It is the writer's opinion, however, that in institutions consisting of a more permanent population, it would be better to use the Schick test to differentiate the susceptible from the immune persons, particularly where new inmates could be segregated from the older inmates and to some degree from each other until their degree of immunity could be determined.

Further to illustrate the variable length of time required to immunize susceptible persons, and to emphasize the fact that active immunization by this method is not rapid enough to be of use to persons recently exposed to the disease, I wish to cite with his permission the experience of Dr. F. A. Finnegan, district officer of the Massachusetts Department of Health for the Wachusett District, at the Baldwinsville Hospital Cottage for Crippled and Epileptic Children.

The epidemic began in October, 1917. Like the epidemic in the Shirley Industrial School, the disease appeared at varying intervals of time for several months. All inmates were cultured and ordinary diphtheria antitoxin was given in immunizing doses 1,000 to 1,500 units to all contacts without satisfactory results.

The Schick test was given February 11, 1918, to 87 inmates, all of whom had previously had diphtheria antitoxin. Thirty-three were positive and fifty-four negative. All positive cases were given toxin antitoxin.

One c.c. was given every week for three weeks with one exception, that of a child who contracted diphtheria, after his second dose had been given.

These patients, who were immunized February, 1917, were again given the Schick test in July, 1918. All were negative but one child.

One child became ill with diphtheria March 31, 1918, twenty-three days after his third injection with toxin antitoxin when evidently immunity has not yet taken place. He was again tested in July, 1918, and was still positive Schick but was negative in May, 1919.

This case undoubtedly shows that an individual idiosyncrasy often exists, making the immunity very late in its occurrence. In this institution there were absolutely no anaphylactic symptoms among the immunized children.

At various times since our active immunization, patients have reported with sore throats, having tonsillar exudates, and who were positive upon bacteriological examination. These cases were given the Schick test and were found to be negative and recovered without the use of antitoxin. In these cases, while they were strictly quarantined a diagnosis was made of follicular tonsillitis in diphtheria carriers. From his experiences the writer has drawn the following conclusions:—

That in institutions, schools, or communities where diphtheria has been prevalent for a considerable period of time, the universal taking of cultures, excepting in clinical cases of sore throat, is practically useless:

That a non-virulent bacillus is often found to be persistent in the throats of so-called chronic diphtheria carriers:

That repeated passive immunization with diphtheria antitoxin does not protect families, schools, or institutions, and that such immunization lasts less than three weeks:

That immunity to diphtheria is both absolute and comparative;

That toxin antitoxin *does* give absolute immunity to diphtheria when more than one month has elapsed after its administration, and that it causes no such troublesome and alarming reaction as antitoxin often does, and that the immunity persists indefintely:

That toxin antitoxin has no curative properties and does not immediately protect against diphtheria. In clinical cases large doses of antitoxin should be used instead of toxin antitoxin for both patients and contacts;

That the Schick test is not rapid enough to be of immediate use in cases exposed to clinical diphtheria and should be used only to separate immunes from non-immunes.

That the Schick test and active immunization should be used in schools, camps, institutions and communities where diphtheria persists and where there is no immediate demand to protect life.

The writer's four years' experience with the use of toxin antitoxin in the prevention of diphtheria, during which time he has immunized more than one thousand persons, every one of whom, when available, has been given the Schick test after periods, varying from three months to three years from their initial dose of toxin antitoxin and practically all of whom, especially after the longer periods, give a negative Schick reaction, has made him optimistic enough to hope that in this method we have a means of exterminating diphtheria.

We all know that smallpox is almost a medical curiosity through the persistent use of vaccination.

We know that typhoid fever in communities under proper health supervision is of unusual occurrence and that by the use of typhoid prophylactic treatment has been practically driven out of our Army and Navy.

We have seen a statement from Surgeon-General Gorgas recently that yellow fever, that plague of tropic latitudes, has been banished from the face of the earth. In view of these marvelous results of modern scientific medicine, is it too much to expect or to hope for that by appropriate legislation compelling all school children, who are admittedly the greatest carriers of diphtheria, to submit to classification by the Schick test and immunization of all non-immunes by the toxin antitoxin method, we may be able to accomplish as much in the extinction of diphtheria as has been done in the above mentioned diseases? Considering the great loss of life as well as the serious sequelae of this disease, let us ask ourselves if any greater boon could be given the human race, particularly the younger portion, than to make the incidence of this terrible disease practically negligible.

It is unquestionably the duty of those who have an opportunity to investigate this method of immunization and, if they find it effective, to educate first the medical profession and through it the public, with the end in view of obtaining legislation compelling the administration of this prophylactic to all children upon entering school and later in life, if necessary, to obtain permanent immunization to this dreaded disease.

PSYCHOSES ACCOMPANYING INFLUENZA: CLINICAL FEATURES AND PROGNOSIS.*

By Egbert W. Fell, M.D., Cincinnati, Ohio.

Psychoses accompanying influenza have been the subject of comment after epidemics since early times, a short summary of the literature in this regard being given by Menninger[1] in a recent article. The epidemic of a year ago did not call forth the number of reports that might have been expected, and that the number of psychoses would warrant. Many of the reports on the medical aspects of influenza mention the frequent accompanying delirium and the occasional development of a severe following psychosis. Especially in army camps and hospitals was the frequency of delirious states often commented on. Menninger[1, 2], Burr[3], Harris[4], the writer[5], and others have published articles dealing with the influence of influenza in the recent epidemic, in precipitating psychoses and in changing their clinical aspect.

As a result of recent studies, a number of points are now sufficiently well established to be of help in dealing with future similar conditions; for instance, a paresis may be brought to light by influenza, or some existing condition (cardio-renal disease) may be so aggravated as to develop the mental symptoms which often otherwise accompany this condition. An influenza may alter the course of an existing psychosis by hastening it, as in the following case: A boy aged twenty, who had finished high school, and for the past two years had been working on his mother's farm, became interested in hygiene in December, 1918. He became very careful of his diet, but did nothing so peculiar as to attract his relative's attention to his mental condition. The latter part of February, 1919, he had influenza from which he made a slow recovery. In March he was noticed to worry a great deal about the hygienic condition of the masses. He read New Thought books, and was always going to invent something but never did. He took no interest in his work, and spent much time sitting by himself. He had causeless outbursts of excitement. When examined, in June, 1919, he did not show hallucinations. He said he was sent to the hospital to write a book telling of his knowledge of the world. He attitudinized and frequently refused to talk or eat. Occasionally he would have a violent outburst, react to voices, and quiet down in a day or two, having no explanation of his conduct except that he was nervous. He is unchanged eight months after his influenza, except that he has become more dull, and not so frequently disturbed.

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* Read at the Forty-fourth Annual Meeting of the Mississippi Valley Medical Association, Louisville, Ky., Oct. 21-23, 1919.

An influenza may add to a phychosis new features, so as to make a confusing picture, as in the following: An attorney, aged 62 years, had for six months been showing a decided slowing up. He was depressed in a listless sort of way and forgetful. He had lost considerable weight. He had a moderately severe attack of influenza, following which he was delirious, quite restless, and disoriented. When examined, one month after his influenza, he was disoriented and fabricated quite extensively. He thought the hospital was a courthouse and would get a little irritated because he was not permitted to go and come as he pleased, as other attorneys were. He would tell in detail of trips he had taken recently, mentioning persons he had seen, etc. His urine showed a few hyaline and granular casts, ankles slightly oedematous. He improved physically, and gradually became less disoriented and fabricated less. He went home much improved four and a half months after his influenzal attack, and has since been quiet, listless and unable to attend to his work—about the same condition he was in before his influenza.

All recent writers are agreed that there is no "influenza psychosis," but the writer has tried to show that there is a series of cases in which influenza could be said, with a degree of certainty, to be the determining factor. In these, influenza does not act as a specific cause, but if there had been no influenza it is a reasonable assumption that there would have been no mental attack at that time. These cases present clinical features which, when looked at as a whole, are rather characteristic and form an overlapping series from a simple neurasthenic depression to a dementia praecox of (usually) the hebephrenic type. The following remarks will be confined to cases of mental disturbance of this type outlasting the acute symptoms for a sufficient time to call for special treatment and consideration, *i.e.*, cases in which institutional care would be considered.

A psychosis of the type under consideration may begin during the course of the fever or during convalescence, usually while the patient is in a run down physical condition. Those beginning during the course of the disease or at the termination of the fever may begin in one of three ways:

1. An ordinary fever delirium and
   (a) the disorientation and sense falsifications persist in varying proportions for a greater or less length of time after the fever has subsided, or
   (b) praecox features may develop.
2. A frank depression (or mania).
3. The trouble may be from the first of the dementia praecox type.

Those beginning during convalescence may come on as (1) a gradual deepening of the usual depressed neurasthenic condition; (2) a frank manic-depressive episode of the elated or depressed type; (3) an outspoken dementia praecox with more than the usual amount of disorientation or feeling of confusion.

Taking up first the manic-depressive cases, as being the least complicated, and as naturally following the simple depression in the series, we find that they present the ordinary features of manic-depressive psychosis. The depressed type is the more common in the writer's experience. Defective heredity is present in the majority, and a history of a prior attack is not uncommon. Especially in run down individuals the mental condition is apt to improve quickly with the physical condition, and taken as a whole, the course is relatively short. In a certain number of cases schizophrenic features develop after a short time, and persist.

The clinical features of the second group, those with more or less the features of a delirium, such as disorientation and sense falsification, vary considerably. There may be a simple disorientation with annoying voices, which may or may not be reacted to, a stupor, or a mixture of delirium with praecox symptoms. These latter are spoken of very aptly by Menninger as "delirium schizophrenoides." The more simple cases run a short course of at most a few weeks, recovering usually with insight but often with amnesia for the height of the psychosis, and at times even for the influenza. Heredity and predisposition are not evident in these cases. Apparent recovery, followed in a few days by a return of the symptoms, was not noticed so frequently as in exhaustive-infective cases of obscure etiology. As a rule, they appeared to run quite an even course, and improvement once started could be counted on to continue. The cases in which the picture is complicated by schizophrenic symptoms, run a longer course. The termination in recovery is, in fact, often the only distinguishing point between this type and some of the cases that eventually turn out to be dementia praecox.

The cases which eventually turn out to be dementia praecox, third group, often begin abruptly during the course of the fever or during convalescence (usually the latter) with more than the ordinary amount of confusion. They are of especial importance, on account of their frequency (about one-third being of this type) and their hopelessness as regards recovery. They are usually of the hebephrenic type and deterioration advances rather rapidly. There is nothing in the picture when the disease is well established to distinguish it from any other case of dementia praecox.

The writer questions the availability of the data on the frequency of dementia praecox after influenza as an argument in favor of the toxic origin of dementia praecox. The proportion of dementia praecox to all psychoses has not been shown to be greater than the same proportion at ordinary times. The same toxin frequently brings up a manic-depressive psychosis, and it at times brings to light a paresis. A stress may act in the same way. The frequency of dementia praecox and of "dementia praecox-like episodes" in the army has often been commented on. In the presence of stress, toxin, etc., an individual is more likely to develop a psychosis, and it would seem that if we knew enough about his mental make up we would be able to foretell what sort of episode he would have if he should become psychotic.

Before a prognosis is given in a psychosis apparently resulting from influenza, the following points should be considered:—

Did or did not the mental symptoms precede the influenza? There is a very natural tendency to attribute to influenza everything that happens during or after the epidemic. The patient's relatives are very ready to overlook any little peculiarity that existed before his illness. Special care should be taken to inquire into the history of these cases before deciding that we are dealing with a "flu confusion," and giving a good prognosis.

If the psychosis was pre-existent, what change was made in its aspect, and what change is likely to result in the course? The symptoms of a dementia praecox may be brought definitely to light or an element of confusion may be added.

If the psychosis was a sequel, did the influenza merely act as a precipitating factor in the appearance of some disease of well-known etiology, such as paresis or cardio-renal disease? If such is the case, it can be assumed fairly that the disease will run the usual course of such conditions.

Having proceeded this far, our consideration is narrowed to the more closely related psychoses, of which a brief outline is given above. If the psychosis is of the manic-depressive type, it is likely to run a shorter course than such condition coming on (apparently) without adequate existing cause. Cases in which there are schizophrenic features should be prognosticated guardedly since it has been found that some cases starting out as a depression, quickly assume a praecox complexion. The writer has not observed that predisposition in the form of heredity or of prior attacks had the effect of shortening or lengthening the present one. The cases presenting the infective type of symptoms —disorientation and sense falsifications—run a short course and usually improve steadily with the physical condition. The tendency of all exhaustive-infective psychoses to relapse temporarily should be remembered. The deliria with marked schizophrenic features run a longer course (three, four or more months), and in these, the danger of the patient deteriorating into a dementia praecox should be kept in mind. It should be remembered that the outcome of these cases is always uncertain, that on short acquaintance, the distinction cannot always be made from dementia praecox, and at times only recovery will distinguish the condition. The dementia praecox cases seem to run a more rapid course than usual. Here again, cases apparently of the praecox type, especially those beginning abruptly with considerable confusion, should not be condemned too promptly.

SUMMARY.

1. A psychosis first noticed after influenza may have been pre-existent and not be influenced in its course by the infection.

2. Influenza may alter the aspect and course of an existing psychosis by hastening it or adding new features.

3. Influenza may precipitate an impending psychosis as paresis or it may aggravate some organic condition (cardio-renal) and bring on the mental symptoms usual to that condition.

4. Manic-depressive psychoses showed marked predisposition and a tendency to early recovery.

5. The infective type of psychosis usually runs an even course and improves with the physical condition. This is not a marked tendency to relapse.

6. Cases apparently deliria with praecox features, or praecox with deliria features, should be treated with considerable consideration prognostically, since recovery may occur when not expected or *vice versa*.

7. Dementia praecox cases may begin as such or with distinctly manic-depressive features or with confusion and disorientation. They run a rather rapid course. and quickly assume (usually) the hebephrenic picture. About one-third of the cases are of this class.

REFERENCES.

[1] Menninger, Karl A.: Psychoses Associated with Influenza. II. Specific Data. An Expository Analysis. Arch. Neurol. and Psychiat., 2: 291 (Sept.) 1919.

[2] Menninger, Karl A.: Psychoses Associated with Influenza. I. A Statistical Analysis. Jour. A. M. A., 72: 235 (January 25) 1919.

[3] Burr: Mental Complications and Sequelae of Influenza. Med. Clin. of North America, 2: 709 (November) 1918.

[4] Harris, A. F.: Influenza as a Factor in Precipitating Latent Psychoses and Initiating Psychoses with a Brief History of the Disease and Analysis of Cases. BOSTON MEDICAL AND SURGICAL JOURNAL, 180: 610 (May 22) 1919.

[5] Fell, Egbert W.: Postinfluenzal Psychoses, Jour. A. M. A., 72: 1658 (June 7) 1919.

THE TREATMENT OF GONORRHEA IN THE MALE.*

BY ARTHUR H. CROSBIE, M.D., BOSTON.

I have been asked to speak to you tonight on the treatment of gonorrhea in the male.

This disease which is, when confined to the urethra, often a simple matter, is rendered dangerous and incapacitating through its complications. In the clinic of the Boston Dispensary, where we see upwards of two hundred such cases each day, I have endeavored to evolve a simple line of treatment which will give rise to as few complications as possible.

Let us first consider acute gonorrhea. It is most important that this stage should be handled carefully and intelligently in order to confine the disease to the anterior urethra and avoid complications which arise from the posterior involvement.

Advice: On first seeing a patient with acute gonorrhea the whole subject should be gone over carefully with the patient and his confidence gained. He must be brought to see the importance of careful treatment and the dangers that may follow neglect. Let him feel that you take a personal interest in his case. Don't give him medicine and tell him to report when the discharge has gone, but see him often and follow every change. I do not feel as strongly about complete rest as I used to. I do feel that all unnecessary exercise should be avoided but doubt the advisability of putting every case to bed. In all but the most severe cases a man is better off mentally and physically to continue his routine occupation. Regular habits, as much rest as possible and plenty of sleep must be insisted upon. He must be advised to avoid dances and suggestive shows and all things which would tend to excite him sexually. The question of diet should be carefully gone over. Of course, it is unnecessary to state that alcohol in all forms is absolutely contraindicated. As you all know, the diet must be simple and bland. Bear in mind, however, that a man who is doing heavy manual work must have a more liberal diet than a man of sedentary habits. Attention must be given to the bowels. It is important that there should be a good movement daily. A suspensory must be worn from the start and continued until the patient is entirely cured. I feel so strongly on this, that I will not treat a patient unless he wears one. The danger of epididymitis is much reduced by taking the drag off the testicles.

Internal Medication. After trying out many things I have come down to two simple old remedies. I use sandal wood oil capsules, three times a day after meals, and before meals a teaspoonful mixture of

Tincture hyoscyamus ʒ viss
Potassium citrate ʒ v
Water up to ℥ iv

The hyoscyamus is excellent to prevent chordee. If chordee is present I give a fourth teaspoonful at bedtime. The potassium citrate helps to render the urine bland. I will consider water under internal medication, because I feel that a large amount of water is more important than any other thing we can do. Enough water should be taken so that the urine almost entirely loses its color. The patient should be instructed to drink at least a glass of water every hour during the day. This will render the urine bland and keep the discharge frequently washed out.

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* Read before the Malden Medical Society, Oct. 20, 1919.

We will now pass to local treatment. Unless there is considerable oedema of the glands and prepuce I start irrigation at once. If there is oedema I withhold irrigations until the swelling has gone down, but start at once then. Where there is oedema, which happens in about 10% of the cases, the patient should be instructed to soak the penis three times a day in water as hot as he can stand for ten minutes. Especial care should be taken in these to ensure all the rest possible. If oedema is not present I give the patient a solution of 10% argyrol and a blunt tipped ¼-ounce uretheral syringe and instruct him to take an injection night and morning after passing urine. It is important that the syringe should have a blunt tip as the long tips injure the mucous membrane of the urethra. This injection of argyrol should be held in the urethra, by compressing the glans penis between the thumb and forefinger of the left hand, for five minutes by the watch. If this injection causes pain before the five minutes is up, as it not infrequently does at the first few injections, it should be immediately released. It is a good axiom that anything that causes pain in a case of acute gonorrhea is bad. In addition to the self-given injection the patient should report once a day for assurance and advice and a hot anterior injection of some rather bland solution such as potassium permanganate 1-5000. I do not think it matters much which solution is used so long as it is hot, as near to 110° F. as the patient can stand, is copious and non-irritating. Personally, I like permanganate though some prefer simple salt solution. The giving of this injection should be done carefully and never intrusted to the patient. The reason for this is that the argyrol if it goes too far back kills all the gonococci it carries with it while this solution does not. Either a large hand syringe or gravity irrigation may be used. Here, too, care must be taken to use a blunt tipped nozzle. The injection must be given with force enough to dilate the anterior urethra momentarily and then the fluid allowed to run out freely. If pressure is kept up too long the cut-off muscle will relax and allow the fluid to go all the way back, which must be avoided. At least a quart of fluid should be used at a time. Under this treatment, as a rule, the discharge quickly ceases, but the treatment should continue just the same for at least four weeks from the onset of the disease. Each day when the patient reports he should pass his urine into two glasses, in order to watch for posterior involvement. If the second urine becomes hazy showing posterior involvement I give very light prostatic massage daily. After the discharge is quiescent the visits need not be so frequent but the patient should be seen two or three times a week at least.

At the end of about four weeks, if the discharge has stopped and the gonococci disappeared, as usually happens, and both urines are clear, with shreds in the first, I discontinue the medicines given in the acute stage, stop argyrol and permanganate injections. Internally I now give only hexamethylenamine grains vii ss. three times a day. I now give an anterior injection of silver nitrate 1-6000. If this starts up a discharge, as sometimes happens, the patient should go right back to the treatment of the acute stage. If there is no reaction to the silver nitrate in about two days another anterior injection of silver nitrate 1-4000 is given. This is continued every other day for about a week. If he is still without symptoms an anterior and posterior irrigation is given by hydrostatic pressure, preferably with 100 cc. syringe. I like this method of filling the bladder much better than by the catheter, as in forcing the fluid into the bladder the whole urethra is dilated. With about 200 cc. of fluid in the bladder the prostate is massaged and the fluid then passed out. At the next visit sounds are passed to make sure that there has been no stricture formation. If the patient is still without symptoms at the next visit, a massage test is given. The prostate is massaged on a full bladder and the urine is passed into a sterile glass. The sediment from this is stained and examined carefully for leucocytes and bacteria. If after three such tests, at intervals of one week, no evidence of disease is found, the patient is discharged cured. To make absolutely sure, I generally ask a patient to return again in about two months for a blood test.

We will now take up chronic gonorrheal urethritis, commonly known as gleet. This is to me more interesting than acute gonorrhea because many of these cases are so stubborn and not infrequently the patient has been told that he can never be entirely cured. I have yet to see one that under proper treatment could not be cured.

The first step is to make a careful examination of the discharge, if any is present. If there is no discharge the prostate should be massaged on a full bladder and the sediment from this carefully examined for leucocytes and gonococci. A four glass test can be made to locate the amount of trouble in the urethra, prostate, or bladder, but I do not feel that this is very essential as I am sure that in all cases of chronic urethritis the prostate and vesicles are involved and it is there that the attack must be centered. The examination with the urethroscope is interesting, showing, often, patches of granulation tissue in the posterior urethra, but these are always secondary to the inflammation in the prostate and vesicles and will clear up as the prostate and vesicles do. I have given up entirely local applications through the urethroscope. I have also given up deep instillations of silver nitrate as I feel that they do not reach the real trouble and sometimes do a good deal of harm. Having completed our tests, our treatment is guided accordingly. If gonococci are present in the discharge go back to first principles and treat the case just as you would acute gonorrhea until the discharge is free from gonococci. If no gonococci are present in the discharge, which is usually the case, we are ready to proceed.

The only medicine I use is hexamethylenamine, which is just enough to discourage the growth of bacteria in the bladder. Aside from this, I do not believe it has any effect on the disease. All patients are made to wear a suspensory until cured. The diet can be more liberal than in acute gonorrhea, but all irritants are tabooed as also is alcohol. More exercise can be allowed, especially after the treatment is well under way, and you find that rigorous treatment does not produce a flare up.

Chronic urethritis can easily be overtreated. I make it a rule to treat not oftener than twice a week and not less than once a week. Regularity is most important. If a patient does not stick to business and come regularly I refuse to continue the treatment. It is a waste of time and money. When starting treatment you must feel your way, always being ready to go back to first principles if there is a flare up.

The first treatment consists only of an anterior injection of silver nitrate 1-4000. If this is stood all right the second treatment is an anterior and posterior injection of silver nitrate of the same strength. At the next visit sounds are passed up to the point where they are tight in the deep urethra. At this time one discovers the presence of a stricture if one is present. If there is a stricture it is dealt with next, either by dilating or cutting, depending on its rigidity. We now come to the most important part of cleaning up these chronic cases. In passing sounds, you may find that they pass easily up to say No. 27 French. You feel sure that there is no stricture and you may feel that there is no need of instrumentation. In that you would be wrong. The posterior urethra is normally very elastic, much more so than the anterior urethra. It should stretch easily, without bleeding, up to No. 38 French. Take a chronic case that admits a No. 27 sound and try stretching up to No. 38 and you will get profuse bleeding with a good chance of getting a perineal abscess. In most of these chronic cases, due to the long standing inflammation in the prostate and vesicles the submucosa of the deep urethra becomes infiltrated with leucocytes and small round cells and instead of being elastic becomes a rigid tube. Our problem is to bring back the normal elasticity of this portion of the urethra. This is done by gradual dilatation with the Kollmann dilator. In the clinic I never allow the assistants to gain more than one point with the dilator at a treatment. The routine is as follows: If on passing sounds it is found that No. 27 French is tight in the posterior urethra, at the next treatment the Kollmann dilator is used to No. 28. The patient urinates into two glasses and these are observed to determine the number of shreds and the amount of turbidity. If the urines are turbid great care must be taken in dilatation. It is usually better to wait until the urine is clear with shreds. After urinating the dilator is passed and the urethra stretched to the desired point. The dilator is then removed and an anterior and posterior irrigation given with silver nitrate 1-4000. About 200 cc. is left in the bladder and then the prostate should be thoroughly massaged. This massage should not be violent, but should be firm enough to express pretty thoroughly the mucus from the prostate and vesicles. The massage, unless too painful, should last about five minutes. The fluid is then passed from the bladder and the amount of detritus observed. At the next treatment there is no dilatation, only anterior and posterior irrigation and massage. I find it better, as a rule, to dilate only once a week. If at any time there is any sign of increased irritation, shown by increased frequency or the urine becoming turbid, the dilatation should cease until the urine again becomes clear. The stretching process is continued until the posterior urethra dilates easily without bleeding up to No. 38 French. If, as frequently happens, a point is reached which causes bleeding, no attempt should be made to pass this point until bleeding no longer occurs. One reason that so many men are afraid of the Kollmann dilator is that they try to do too much at one sitting.

After the urethra dilates easily up to No. 38 French, if there is inflammation of the prostate and vesicles the irrigation and massage can be continued with an occasional dilatation. When the patient has three negative massage tests, at intervals of one week, he can be discharged cured.

Let us now consider some of the common complications of gonorrhea. Complications, when they do come, are very apt to be the fault of the patient or the fault of a too zealous physician. Epididymitis is one of the common complications. When it appears all local treatment must be stopped for a time. All very acute cases should be operated on at once under local or general anesthesia. After puncturing the abscesses in the epididymis the process rapidly clears up and local treatment can be started again in about a week. In cases not operated on the beginning of treatment is very apt to cause a recrudescence of the trouble. I have yet to see a flare up in a case that has been operated on. Of course, in all cases the appearance of epididymitis means posterior involvement and this must be cleared up when the right time comes. Follicular abscesses, when they occur, should be opened preferably through the urethra when possible.

Stricture, when possible, should be gradually dilated, never divulsed. A stricture which can be dilated leaves less scar tissue than one that has been cut. My feeling is that we cut fewer strictures than we used to. A thing to be remembered is that there is nearly always inflammation of the prostate and vesicles accompanying a stricture.

Gonorrheal rheumatism is always an unpleasant complication. I have thoroughly tried out vaccines and have given them up. I devote my whole energy to clearing up the local process in the prostate and vesicles. When this is done the inflammatory process in the joints stops. In some stubborn cases it becomes necessary to open and drain the prostate and vesicles through the perineum. These are the only cases in which I resort to this operation.

Acute inflammation of the prostate gland requires rest in bed, hot rectal irrigations and light massage. If an abscess forms there may be acute retention requiring catheterization. Most of these abscesses drain off through the urethra, but occasionally one has to be opened, either through the perineum or through the rectum. Sometimes these abscesses rupture into the rectum spontaneously. When they do they always heal without trouble. Of course, when the acute stage has subsided there is always a chronic inflammation left behind which must be cleared up.

Gentlemen, there doubtless are many points in this paper that I have not made perfectly clear, I hope the discussion will bring these out.

TISSUE INJURY AN IMPORTANT FACTOR IN THE DEVELOPMENT OF TUBERCULOSIS.

By Herbert F. Gammons, M.D., Dallas, Texas,

Superintendent, Woodlawn Tuberculosis Sanatorium.

During the past few years evidence has been accumulating emphasizing the part played by the individual cells in resisting tuberculous infections.

Krause[1] has shown how the cells mechanically wall off the bacilli and their poisons by the formation of the tubercle.

It has been taught in the past that tubercle bacilli evade the blood stream except when the resistance has fallen just before death. Krause[2] has shown that tubercle bacilli in many instances invade the blood stream and, circulating through the tissues by the carrier, lodge in different areas, producing disease where the conditions are more favorable for their activities.

While the condition of a patient's blood as regards the antitoxic and bactericidal properties has a profound influence in resisting infection and disease, still the condition of the individual cells often apparently determines the outcome of the infection.

When one considers the disease tuberculosis in a given patient he concludes that as a rule the condition is a chronic one with perhaps an exacerbation as a result of the extension of the disease process into normal tissue and, further, many of these patients have had tubercle bacilli circulating through their bodies to a greater or less extent for many years.

Taking into consideration the fact that practically all adults have had a tuberculous infection, one realizes the importance of tissue injuries in the determination of the point of localization of tuberculous complications. These injuries may be of a mechanical, physical, or chemical nature.

The following cases seem to indicate that injury of the tissues in the different areas affected has been an important factor in the determination of the localization of the tubercle bacilli and that the resistance offered by the fixed cells is greater in many instances than is that offered by the antitoxic and bactericidal properties of the blood stream.

CASE 1. Male. Family history of tuberculosis. In 1909 patient fell, injuring right knee. Knee continued sore and swollen until 1915 when the soreness and swelling increased and the knee joint was resected. Diagnosis, tuberculosis of the knee. In 1917 this patient came under my observation. Examination showed him to be suffering with advanced pulmonary tuberculosis. The history and physical findings showed that the disease in the lungs had existed for a long time previous to the injury.

CASE 2 Male. Family history of tuberculosis. In 1911 patient injured right knee by falling against a stone. The injured knee gradually increased in size and it also became very sore. In 1913 it was decided to amputate the leg above the knee. Diagnosis, tuberculosis of the knee. I saw the patient in 1919 and examination showed that the patient had a moderate amount of pulmonary tuberculosis and the physical signs with the history showed that the disease had existed for some time previous to the injury.

CASE 3. Male. Family history of tuberculosis. In 1903 patient was kicked by a horse, injuring the tissues in the vicinity of the right ilium. Tissues at the site of injury remained more or less painful and in 1910 an abscess formed, which was opened and discharged pus bacteriologically positive for tubercle bacilli. In 1910 this patient injured the right ankle, which continued sore at intervals. In 1917 this patient came under my observation and showed a chronic tuberculous infection in both lungs. Later the ankle joint injured broke down and was found to be tuberculous. X-ray examination of the right ilium showed it to be tuberculous.

CASE 4. Male. Family history negative. In September, 1918, patient had a bad contusion of the right hand. The hand continued sore and swollen and a few months later x-ray examination showed a tuberculous condition of the small bones of the hand in the injured area. Physical examination showed a pulmonary involvement which, according to the history and physical signs, was of long duration.

The above cases seem to show that the injury to the tissues in the different areas was the cause of the localization of the tubercle bacilli and the development of disease. Furthermore, while there have been many injuries to the tissues of tuberculous patients without any complication developing, still patients with pulmonary tuberculosis should avoid all possible injuries.

REFERENCES.

[1] Krause, A. K.: The Nature of Resistance to Tuberculosis. Am. Rev. of Tuberculosis, 1917, Vol. i, p. 65.
[2] Krause, A. K.: Tracheo-bronchial Gland Tuberculosis. Am. Rev. of Tuberculosis, 1919, Vol. iii, p. 100.

* * *

ELECTION OF DR. SIMON FLEXNER.—It has been announced that at a recent meeting of the Société de Pathologie exotique at the Institut Pasteur of Paris, Dr. Simon Flexner of the Rockefeller Institute for Medical Research was elected an associate member. He has been elected also to associate membership in the Société Royale des Sciences Médicales et Naturelles of Brussels and to the Société Belge de Biologie of Brussels. On December 22, Dr. Flexner was made a corresponding member of the Bataafsch Genootschap der Proefondervindelijke Wijsbeerte of Rotterdam, Holland.

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MATERNITY BENEFITS.

Last year several bills for maternity benefits were under consideration in the Legislature. One of them passed in the Senate and very likely would have passed in the House had it not been held up in the Committee on Ways and Means in order that it might be perfected. Last autumn the former chairman of that committee and now the leader of the majority in the House, Mr. B. Loring Young, asked me as president of the Massachusetts Medical Society to study the different bills, to confer with the Department of Public Health, and to suggest whatever changes would be likely to make such contemplated legislation acceptable to the medical profession, which of course is most intimately concerned. After seeking the advice of several of our District Medical Societies and of the Obstetrical Society of Boston, and after careful consideration by the Joint Committee of the Massachusetts Medical Society and the Massachusetts Homeopathic Medical Society on State and National Legislation, I offered some suggestions, all of which were accepted. And the following Bill has been introduced into this session of the Legislature:

An Act

TO ENABLE THE STATE DEPARTMENT OF PUBLIC HEALTH TO PROVIDE ADEQUATE CARE FOR MOTHERS AND CHILDREN DURING THE MATERNITY PERIOD.

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

Section 1. From and after the first day of January, nineteen hundred and twenty-one, the State Department of Public Health shall have charge of the administration of maternity care, in accordance with the provisions of this act.

Section 2. Maternity care may be granted for such a period before and after confinement as the State Department of Public Health may determine. Any woman who is pregnant and who desires advice, instruction, nursing, or medical care for herself or infant shall be entitled to the benefits of this act provided that she make application to the State Department of Public Health at least three months before the expected date of her confinement, and provided that she accept and carry out such instructions in general hygiene and infant care as, in the judgment of the State Department of Public Health, her individual case demands, and, in the discretion of the State Department of Public Health, hospital care or home nursing or both medicine and medical care, and such other obstetrical care as may be necessary. No woman, however, shall be entitled to care provided under this Act who shall not have been a resident of the Commonwealth for one year at the time of her confinement or anticipated confinement.

Section 3. Maternity cases under this Act shall not be given to a city or town physician, in his or her official capacity. The recipient of maternity care under this Act, if remaining at home, shall be allowed, in all cases, to choose her own physician, subject to said physician's acceptance of the fee schedule for such cases, and other rules and regulations of the State Department of Public Health, governing this Act.

Section 4. The State Department of Public Health shall make, and may from time to time add to, alter, amend or repeal, such rules and regulations as may be necessary to carry into effect the provisions of this Act, including rules to define and delimit as accurately as may be possible, the conditions under which, and the time when women are entitled to benefits under this Act.

Section 5. The commissioner of public health and any person or persons duly assigned by him for the execution and enforcement of the provisions of this Act, may, in the discharge of his official duties pertaining thereto, administer oaths and affirmations; and any person knowingly making any false or misleading statement under oath or affirmation so administered shall be guilty of perjury and punishable by the penalties prescribed by law for that offence.

Section 6. This Act is hereby declared to be a public health measure and the maternity care under this Act shall be granted free of cost to all persons entitled thereto regardless of their financial condition.

Section 7. For the purpose of making necessary preparations for carrying out the provisions of this Act, there shall be appropriated, to be paid out of the treasury of the Commonwealth from the ordinary revenue, to be expended by the State Department of Public Health, a sum not exceeding twenty-five thousand dollars. The provisions of this section shall go into effect July first, nineteen hundred and twenty.

Section 8. From and after January first, nineteen hundred and twenty-one, the State Department of Public Health may expend such sums for administering the provisions of this Act and providing maternity care thereunder as may be annually appropriated by the general court.

Regarding this Bill there is great diversity of medical opinion. Physicians in general are not socialists. They do not like the present Industrial Accident Insurance business. They dread the threatened health insurance measures, of which this Maternity Benefits Bill is very probably only the beginning. Not only as citizens do they object to the tremendous increase of taxation involved in such paternalistic governmental measures, but professionally they object to such interference with their freedom.

Overworked country doctors complain that even the present state and national requirements are almost unbearable. Bad enough, they say, to have to particularize death certificates to suit the State House and to count their morphine tablets and make record of every dose of paregoric, without having to send to the Department of Public Health the pelvic diameters and blood pressures of their obstetric patients. Moreover, some fear that when the State pays the bills, the women will demand continuous medical attention during labor, instead of being content, as many are now, with having the doctor present just at the last, and with, perhaps, a couple of subsequent visits. Nor are the obstetric specialists in any agreement regarding the probable effects of the Bill. Some believe it will reduce both maternal and infant morbidity and mortality by requiring greater prenatal and obstetrical care than is now generally given. But others see in it all sorts of disadvantages.

In all the discussions much time has been wasted over economic and political issues. We were fairly warned that some such legislation is extremely likely to be passed. And, as Governor Coolidge recommended it in his annual message, no veto need be expected. That we were given every chance to make the Bill unobjectionable was certainly a courtesy to be grateful for and to take advantage of. Nor is it yet too late to ask for amendments. And one purpose of this communication is to ask for further suggestions from the profession for bettering the Bill.

The joint committee on legislation decided that, even if possible to defeat the measure, it would not be wise for the state medical societies to appear in opposition. Therefore it was voted to take part, as we were asked to do, in framing the Bill, and if our suggestions were adopted, to support whatever received the endorsement of the Department of Public Health that will have full responsibility in carrying the measure into effect. Here is an instance of the great responsibility resting upon this committee when there is no unanimity in the medical profession regarding proposed legislation. And in such instances it is incumbent upon those of us who are in favor to give our reasons: Here they are:

1. This Bill is intended for the benefit of our patients, not for our benefit. And yet, in the large and true view, whatever benefits our patients also benefits the medical profession. The only real question then is if this legislation will really benefit Massachusetts families.

2. While the rich in their own homes, and while the poor in lying-in hospitals can now have excellent obstetrical and nursing service, and while in the smaller communities all families in such times of need are perhaps well served, there yet can be no doubt that at least in our larger cities families of moderate means cannot afford and so do not receive first-rate service.

3. In other conditions of helplessness, by means of state and other civic institutions, and by various semi-charitable organizations, families having only small or moderate incomes can get excellent professional and nursing service. Is there any reason why such families shall not likewise be helped when the mother's health and even life is in jeopardy—to say nothing of that of her infant before or after its birth?

4. In the division into specialties the medical profession is making great advance in usefulness. But this is not as true of the obstetrical specialty as it is of some others. To begin with such specialists are as yet few and far between. Nine-tenths, if not more, of our babies are born into the hands of general practitioners,—*per vias naturales*, it may be remarked in passing. One potent reason why obstetrical specialists are still few is because it is so generally by obstetrical service that the general practitioner becomes the family physician; furthermore, and because of this, many physicians undertake obstetrical practice and continue it long after they wish they could afford to decline such calls. Except in the large cities, there is thus small room for would-be specialists in obstetrics. They will have far better chances if this Bill becomes law. For manifestly it will be necessary to provide a supply of consulting obstetricians throughout the State. This will lift the standard of obstetrical practice.

5. The troublesome question of midwives will also disappear. For when the State stands ready to furnish the service needed, both obstetrical and nursing, the lesser fee of the midwives for this combined service of doctor and nurse will lose its present attractiveness.

6. If for no other reason, I am in favor of the Bill because of its promise to provide the proper nursing service that now is unobtainable in most families. In prenatal oversight and in subsequent child-welfare visiting such service has latterly been shown to be fully as beneficial, as in the period of the labor and of the confinement in reducing maternal and child mortality and morbidity.

It scarcely needs to be pointed out that, by the efficient organization and distribution of a better nursing service, great advantages may also confidently be expected by both doctors and nurses.

7. Immense responsibility will devolve upon the Department of Public Health if the proposed Bill becomes law. For while the choice of her physician is allowed to the expectant mother applying for state aid, such choice is restricted to physicians who agree to accept the fees and also the rules and regulations of the Department. This will insure against the employment by the State of physicians whose practice is not up to the standard. Herein it is plain there is rich opportunity for all sorts of trouble. But the acceptance of the other horn of the dilemma would be far worse. For it is plain that in furnishing the service the State in no small measure guarantees that it shall be of standard quality.

Alfred Worcester, M.D.,
President, Massachusetts Medical Society.

Influenza in Chicago.—Four deaths from influenza and sixteen from pneumonia, and three hundred and ninety cases of influenza and one hundred and fifteen of pneumonia were reported in Chicago on January 16. Under the direction of John D. Robertson, Health Commissioner of the city, three thousand nurses will be sent to different parts of the city. On January 15, there were reported at the Great Lakes naval training station 475 cases of influenza, with one death.

THE ARMY MEDICAL SERVICE.

The activities of the Medical Department of the Army for the year 1918 represent the highest achievement of medical service in this country. Never before in our history has so large an armed force been in the field; never before has the medical profession of the United States been called upon to serve almost as a whole in the Medical Department of the Army and Navy. A comparison of the maximum strength, three hundred thousand men, during the Civil War with the maximum strength during 1918, over three and one-half millions, gives some idea of the tremendous expansion and rapid development demanded of the Medical Department during the war. Practically the entire medical profession of the country, guided by the best professional and administrative ability of the leaders of the profession and supported by the patriotic service of the general body of physicians, protected the health and lives of our men at home and abroad.

The work of the Medical Department consisted of six main fields of activity: (1) the procurement and training of the Medical Department personnel; (2) the expansion of hospital facilities in this country; (3) the physical examination of volunteer and drafted men; (4) the protection of military forces from disease; (5) the procurement and distribution of medical and hospital supplies; and (6) the care of the sick and wounded. The Report of the Surgeon General of the United States Army for the year ending June 30, 1919, describes the work of the Medical Department.

In order to make it possible for the Medical Department to keep pace with the expansion of the military forces of the Army, it was necessary to procure and train a large number of physicians. The physically and professionally unfit were eliminated, and those selected were given a brief intensive course of training to fit them for their duties in the military service. At the beginning of the war, the entire Medical Department, including commissioned officers, contract surgeons, army nurses, and civilian employees, numbered 8,634. During the war, this number was increased to 354,796, almost three times its original strength. The Medical Corps increased from 833 to 30,591.

The expansion of the hospital facilities in this country had to increase proportionately as the Army expanded from one hundred thousand to two million. It was necessary to provide adequate hospital facilities to care for both those sick from ordinary causes in the camps in this country and those additional men who became incapacitated by epidemics of ordinary infectious diseases and influenza. Hospitalization had to be provided also for those who returned sick and wounded after service overseas. Among the Expeditionary Forces it was necessary to provide hospital accommodations for those wounded in combat as well as for the usual percentage of sick and injured. Hospitals of one or two thousand beds, and sometimes larger, were organized with almost unbelievable rapidity. So far as the records of this country show, our hospitals had never been so crowded as they were during the influenza epidemic. In the American Expeditionary Forces there were provided hospital facilities, including the emergency beds and those in the convalescent camps, for fifteen men out of every hundred. Some of the hospital centers for our forces provided twenty-five thousand or more beds.

Of no slight importance was the service of the Medical Department in the physical examination of recruits. At least one-third of all the men who offer themselves for enlistment in the Regular Army are rejected. Those physically unfit for service had to be eliminated, and of those accepted, records had to be made upon entering the Army, during military service, and at the time of demobilization. There were retained for further treatment those soldiers who could be benefited thereby and who desired it, and men who had contracted venereal disease whether they wished it or not.

In order to protect the fighting forces from preventable diseases during their time of service, the Division of Sanitation was expanded to coördinate successfully the efforts of the sanitarians of the Army. Experienced sanitary officers made periodical and emergency inspections at the various camps in this country and in France to assist and coördinate the work of the camp sanitary officers

At the beginning of the war, it became necessary for the Medical Department to procure and distribute all medical and hospital supplies. During the years immediately preceding our active participation in the war, the chemical and drug industry and that of surgical equipment was expanded considerably beyond the pre-war status. It was necessary to mobilize the entire productive activities of the drug trade in this country, and to produce sufficient surgical dressings and hospital equipment. The Department is to be congratulated for its success in procuring and transporting medical, surgical, and hospital supplies.

The care of the sick and wounded during the war was an undertaking of tremendous proportions. During the year the total number of sick officers and enlisted men that required hospital treatment or treatment in quarters was 2,833,204, excluding soldiers treated for minor ailments and the treatment of civilians attached to the medical personnel. Of this number, 2,422,362 cases resulted from disease, 182,789 from ordinary injuries, and 228,053 from battle injuries. The total number of deaths from disease was 47,384; from wounds received in battle 13,735; those killed in action and lost at sea, 34,359; from ordinary traumatisms, 3,500. Influenza, combined with pneumonia and respiratory diseases, caused 17.33 per cent. of the total admissions for diseases and 82 per cent. of the total deaths. The next important cause of deaths during 1917 and 1918 was measles. Approximately 5.6 per cent. of the men who came into the military service from civil life had a venereal disease; approximately 7.4 per cent. of all the men in the Army were detected with a venereal disease at some time prior to their leaving the United States. Of this number three-fourths had contracted the infection prior to coming into the military service; two-thirds of all that were detected with a venereal disease in the entire Army, during 1917-18, brought the infection in from civil life.

The Medical Department of the Army served with untiring devotion and unselfish effort at a time when the complete and efficient support of the medical profession was needed more than it has ever been needed during the history of our country.

* * *

IMPORTANT FACTS ABOUT CANCER

The attempt of the United States Public Health Service to place before the public in the simple, straightforward language of its "Keep Well" series of publications the most important facts regarding the early symptoms of various diseases is particularly commendable in its warning about cancer, because of the vital importance of early detection of this disease. A pamphlet issued recently, "Cancer—Facts Which Every Adult Should Know," in all probability represents the first instance in which a national governmental department has attempted educational propaganda work on this subject. The importance of this effort to enlighten the public in regard to one of our most fatal diseases should be recognized and brought to the attention of professional and lay readers.

In spite of the fact that cancer, if treated in its early stages is curable, it has been discovered that this dreaded disease is increasing in America and throughout the world in general. Its mortality rate now ranks with that of tuberculosis, pneumonia, heart disease, and diseases of the kidney. This is due in considerable part to the ignorance of the public in detecting the early stages of the disease; it is hoped that widespread education in regard to the nature and the development of the disease will enable people to recognize the early symptoms of the precancerous state and will encourage them to seek competent advice for the prevention and cure of cancer.

In 1917, the United States Census Bureau announced a total number of 61,452 deaths from cancer, as compared with 112,821 from pneumonia, 110,285 from tuberculosis, 115,337 from heart disease, and 80,912 from kidney diseases. Furthermore, the recorded death rate shows approximately a two and one-half per cent. increase in cases each year. The fact that it has risen from 61.9 deaths per 100,000 of population in 1900 to 81.6 in 1917 may be explained in part by the improvement in the recording and gathering of vital statistics and to more accurate diagnosis; but it is believed generally that these factors alone do not account for the increase in the disease.

It is unfortunate that the early discovery of cancer is difficult, for it is regarded now as curable if it is detected in its early stages and given immediate and competent treatment. The disease is particularly insidious in that its first attack is usually painless and therefore ignored in the majority of instances. This neglect allows the disease to develop until a major operation is necessary and the chances of cure are considerably diminished and often entirely lost. This situation is not made any less hopeful by the fact that many persons who strongly suspect the presence of cancer do not seek the best medical advice, but allow their condition to become aggravated by advertising charlatans and patent medicines until they are beyond the stage which may be benefited by the best medical and surgical attendance.

The popular beliefs that cancer is contagious and hereditary have been found to be fallacious. The first has resulted often in neglect of those suffering from the disease. The Public Health Service has announced that so far as it can be learned at the present time, there is no germ capable of causing the disease either in human beings or in animals In regard to heredity, the statistics gathered by insurance companies for many years show that even if both parents died of cancer, it does not follow that the child will develop the disease. It is the tendency to cancer, rather than the disease itself, which may be inherited; if, therefore, in some families there seems to be a particular susceptibility to it, the various members should have some knowledge of the early symptoms and be alert in the recognition of the first suspicious signs.

Cancer is not a constitutional or "blood" disease.

The development of cancer clearly shows the importance of early treatment. The tissues of the body, the muscles, glands, and bones are each composed of a large number of tiny cells, held together by material which may be compared to the mortar used to hold bricks together. These cells are alive, constantly growing and dying off, and sometimes growing not in the usual order, but into a little group of lawless cells which form the nucleus of cancerous development. Any part of the body may be affected—the skin, the breast, the stomach, throat, or any other part. Very often there is formed a small, hard lump which can be detected and successfully removed if it is discovered before it begins to grow and branch off into the surrounding tissues. It is this power of penetration which makes cancer a fatal disease, in distinction to such benign growths as warts. If allowed to grow, the cancerous mass becomes enlarged and minute portions are detached and carried by the circulation of the blood or lymph to other parts of the body, where they continue to live and form new cancerous growths.

Although we do not know just what it is that makes the first cell take on a malignant character, we do know something about the conditions which seem favorable to the change. Continued local irritation of various kinds and benign growths or ulcerations often result in cancer. Burns from pipe stems, for instance, may be frequently the cause of cancer of the lip, and constant irritation from bad teeth may prove to be a factor in its origin. Cancer is caused sometimes among the East Indian races by the chewing of the betel nut, and in the natives of the Kashmir by the burns received from the kangri baskets of live coals which are worn as warming pans. Immediate attention should be given, therefore, to persistent ulcerations, cracks, and sores, warts, moles, or birthmarks which change in appearance or grow larger.

So far as it can be ascertained, no one is immune to cancer. It is true that women are more susceptible to the disease than are men; it has been found that between the ages of thirty-five and forty-three, three times as many women as men die of cancer, and between the ages of forty-five and fifty, twice as many die as a result of it. Cancer rarely results from a sudden injury, but may be attributed in most cases to some continued irritation. Probably sixty per cent. of cancers of the rectum are first regarded as piles—the importance of thorough medical examination cannot be too strongly emphasized.

The increasing incidence of cancer indicates that the time has come when it is necessary that our people should be educated as thoroughly in regard to the nature of cancer as it has been by the nation-wide campaign for the control of tuberculosis. The United States Public Health Service has undertaken this important educational work, and should be encouraged and supported by the coöperation of the profession and the general public.

THE PHYSIQUE OF HARVARD FRESHMEN.

The results of this year's physical examinations of first-year men at Harvard University, reported by Dr. Roger I. Lee, Professor of Hygiene, are interesting and significant, showing an increasing intelligence and enlightenment among parents in the matter of health and disease prevention. The examinations during recent years have shown a continued improvement. This fall it was found that the teeth of very few freshmen had been neglected, only rarely were found cases of serious uncorrected defects of the eye, 43.6 per cent. of the regular first-year men had had their tonsils removed, and a small per cent. had had operations on the nose and throat. These figures indicate that parents are beginning to appreciate especially the dangers from diseased tonsils; in 1914 and in 1919 only four individuals in each group were found upon examination to have tonsils so diseased as to require removal. It is of professional interest to observe that whereas in 1914 many of the freshmen had had portions of their tonsils removed, complete removal was found to be the rule in 1919.

The amount of organic disease discovered by the examinations of this year was comparatively slight: 1.3 per cent. showed organic heart disease; 4.6 per cent. had heart conditions which made supervision desirable; there were no cases of undoubted tuberculosis, and less than one per cent. of freshmen seemed to require supervision for possible lung damage.

In 1916, a system of rating freshmen from a standpoint of bodily mechanics was inaugurated by Dr. Lloyd T. Brown. The examinations in that year and in 1919 show that eighty per cent. of freshmen do not use their bodies properly. In establishing good habits of bodily use the preparatory school might be of considerable service; if this is neglected at earlier periods, it is desirable that correction be attempted at college. As physical training now is required of freshmen, it will be possible to reëxamine them at the end of the year and ascertain any improvement there may be. Lectures to all freshmen on the proper mechanical use of the body and feet, and special training for those whose bodily mechanics have been found to be defective, should result in definite improvement by the end of the year. It is hoped that the fact that physical training is required of first-year men will encourage each freshman to undertake the form of exercise from which he will derive the most individual benefit. There are many, of course, who need only regular exercise; but among the others there have been found various conditions requiring special attention, from those requiring supervision in the pursuance of organized sports to those which show a need for special exercises for the development of the delicate or physically handicapped. Although there is still much to be desired of preparatory schools in physical supervision, and corrective work in colleges admits of further development, at least it is gratifying to discover a greater intelligence among parents and a corresponding improvement in the physical condition of college freshmen. The Harvard examinations of this year give evidence of the value of physical supervision in preparatory schools and of the need of more corrective work in colleges; they give, also, promise of continued improvement in the health of American manhood in the future by means of a more widespread and intelligent coöperation between the school, the college, the parent, and the student.

MEDICAL NOTES.

Influenza on French Steamer.—It has been reported that the French steamer *Malte*, from Havre and Vigo, with passengers and cargo for Rio Janeiro and Buenos Aires, arrived at Buenos Aires on January 7 with five passengers dead, seven dangerously ill, and a large number suffering from influenza. The disease appears to be of the most dangerous form of influenza.

Pasteur Institute of Southern India.—*The British Medical Journal* has published the following summary of the report of the director of the Pasteur Institute of Southern India, Coonoor, for the year ending February 28, 1919. It states that 2,825 Asiatics and 150 Europeans and Eurasians were treated during the year. This shows an increase of 691 among the former and a decrease of 112 among the latter. Six patients died during the course of treatment (4 from hydrophobia, 1 from cholera, and 1 from smallpox). Four died less than fifteen days from the date of the completiou of treatment, and 22 fifteen or more days from the completion of treatment. The latter are classed as failures (0.74 per cent.). Including the cases which died less than fifteen days after the completion of treatment the percentage of deaths was 1.05. The bites in most cases (95.6 per cent.) were inflicted by dogs; jackals were responsible for 2.09 per cent. It is stated in the report that when a person is bitten by an unknown dog without provocation, rabies should be suspected and treatment applied for at Coonoor. In a circular giving advice with regard to the immediate treatment of a bite by a dog, the value of the early application of the actual cautery or caustic agents is insisted upon. A superficial wound without pockets can, it is said, easily be sterilized by nitric acid, hydrochloric acid, glacial acetic acid, or undiluted formalin. In a lacerated wound the whole of the exposed tissues should be destroyed by liquid caustic or the actual cautery. A punctured wound should be treated by introducing the caustic into the depths with a glass pipette. The skin should be previously greased to avoid injury to it, and the excess acid may be sucked out of the puncture after about thirty seconds. In both cases it is good surgical practice to excise the whole of the necrosed surfaces a few minutes after the acid application and to sew up the wound in the expectation of obtaining healing by first intention.

American Memorial Hospital at Rheims.—A report which has reached New York recently states that during the month of November there were admitted to the temporary building of the American Memorial Hospital at Rheims seventy-six patients, in addition to the fifty-nine patients already being cared for. Of the new cases twenty-one were maternity patients. The dispensary aided nine hundred and thirteen patients; the dental clinic received one hundred and forty-five new cases and performed three hundred and sixty-three operations. All of this work is being carried on in the temporary building of the American Memorial Hospital pending the completion of its permanent hospital, for which $200,000 has been provided. With more than sixty thousand people returned to Rheims, the need for the hospital is greater than ever.

HONORARY ELECTION FOR AMERICAN PHYSICIAN.—Dr. Jacques Loeb has been elected an honorary member of the Royal Institution of Great Britain and Ireland.

TUBERCULOUS SOLDIERS.—Announcement has been made of an order issued recently by the War Department to provide for the discharge from army hospitals of officers and soldiers who, after treatment for a period of twelve months, are not making satisfactory progress. These men may seek further treatment from the Public Health Service. It has been suggested either that additional governmental hospitals be built in order to insure a continuance of scientific hospital treatment to soldiers who have contracted tuberculosis in the service, or that sufficient compensation be provided by which they may pay their own expenses for treatment, inasmuch as there are probably forty-six thousand men who will be affected by this order, and the Public Health Service will not have sufficient equipment to provide for the care of this large number of men who may come under its supervision by the new order.

DRUG ADDICTION.—At two recent meetings of the American Public Health Association, the subject of drug addiction was the subject of considerable discussion, and various opinions on the treatment of drug addicts have been published in a number of medical periodicals throughout the country. Until recently, there has been a tendency to treat narcotic drug addicts as criminals rather than as subjects of medical treatment; but at the present time, drug addiction is regarded by many as a disease rather than as a crime. Among those who have endeavored to point out the error of the older view is Dr. F. S. Bishop of New York, who has published an article on this subject in a recent issue of the *American Journal of Public Health*. Dr. Bishop believes that we are in a transitional stage in our attitude toward the drug addict, and that serious consideration of drug addiction as a problem of clinical and internal medicine and of experimental laboratory research is a comparatively new department of investigation. He points out that there are, of course, some addicts who are criminals, but they are usually criminals independent of being addicts and as a general rule were criminals before they became addicted to the use of drugs. Others become habituated to the use of drugs in spite of their efforts to be freed from it by various methods of treatment. Dr. Bishop urges the necessity of increased professional skill and technical ability in the treatment of these cases and additional research to determine the true conditions and the most effective methods of educational, scientific, and medical control of drug addiction.

NEED OF PHYSICIANS IN AFRICA.—In a recent issue of a French Bulletin, the sanitary conditions in Belgian Congo have been reviewed by Dr. G. Daniel. He reports that sleeping sickness and leprosy are the chief maladies which seem to attack the natives. The tsetse fly is numerous and sanitary supervision of the nomadic tribes is almost impossible. Two sanitary posts have been established near Lake Albert in order to protect important lines of travel. The extent to which leprosy spreads among the Africans is unknown, as it is difficult to obtain statistics because the natives fear the intervention of foreigners and conceal their disease. Some indication of the amount of work to be done in this district is shown by the fact that in one village in which Dr. Daniel at one time treated fifty cases, five hundred presented themselves for treatment on his second visit. The local authorities are ignorant of the symptoms of the disease, and intelligent physicians are greatly needed. Dr. Daniel believes that leprosy is so widespread in the country that international measures should be undertaken to control the disease.

YELLOW FEVER IN CENTRAL AMERICA.—A recent report from Tampico, Mexico, states that there is an epidemic of yellow fever in many cities and towns of the states of Yucatan, Campeche, Chiapas, and Oaxaca. Quarantine has been established against Salina Curz, Frontera, and other ports. It is reported that Vera Cruz is free from the disease.

American Association for the Advancement of Science.—At a convention held recently at St. Louis by the American Association for the Advancement of Science, Dr. Simon Flexner of the Rockefeller Institute for Medical Research, President of the Association, is reported to have stated that scientists are progressing in their fight on cancer, and that it seems possible that yellow fever may be the first disease to be eradicated by science. Dr. Noguchi, a Japanese scientist, is working on a serum which may prove to be the means of eliminating yellow fever. An adequate preventive has not yet been discovered against influenza, spinal meningitis, or infantile paralysis.

Health Conditions During 1919.—In the first issue of the *Statistical Bulletin* published by the Metropolitan Life Insurance Company, there is a survey of health conditions throughout the country generally and among the twelve million policy-holders of the Company during the year 1919. Although the year began under unfavorable conditions, it is closed with better health conditions than have prevailed during any year on record. Between January and March, the United States and Canada were still feeling the effects of the wave of influenza, and in fact, many cities were having their most severe attacks of the disease during those months. It was expected that influenza would return this year and result in a high death rate from diseases of the heart and kidneys; many persons who were left in a weakened condition as a result of the disease were expected to die and thus increase the death rate. Contrary to expectations, however, beginning with the month of April and continuing for each month thereafter up to the end of the year, mortality rates fell below the average of the preceding years. Throughout the summer and autumn the rate was unusually low and it did not increase particularly during the latter quarter of the year.

An investigation of the twelve million records held by the Metropolitan Life Insurance Company shows an unusually low prevalence of such diseases as tuberculosis, typhoid fever, measles, whooping cough, diseases of the heart and kidneys, and diarrheal complaints. During the last quarter of the year there was an increase in the death rates from scarlet fever and from diphtheria; but these were not of sufficient importance to influence the total death rates. A marked improvement was noticed in the mortality among negroes.

During the year, the total death rate per 1,000 policy-holders declined from 15.5 in 1918 to 10.4 in 1919, a reduction of 33 per cent. Compared with 1911, the 1919 rate shows a reduction of 17 per cent. Tuberculosis of the lungs during the year was 33 per cent. lower than in 1911; typhoid fever has shown a decline of 69 per cent. in the rate since 1911. The four important diseases of childhood,—measles, scarlet fever, whooping cough, and diphtheria,—show altogether a decline of 49 per cent. in eight years.

Disinfection of Railway Cars in Italy.—Among the important health problems in Europe is the disinfection of railway cars Before the war, the Germans had established along the Russian border disinfecting outfits which could disinfect effectively whole cars. In Italy there has been devised a method of developing gas in closed tanks and leading it under pressure to the cars. Some of the products of sulphur have been found to be adequate in disinfecting the backs and cushions of the seats. The liquids used vary considerably in value; some, though efficacious, have fire risk or have persistent odors. Gas disinfection is to be adopted on Italian railways because of the comparative ease of its application.

Infections in Foreign Countries.—The problem of dealing effectively with communicable diseases is a particularly interesting and difficult one. Thousands of men have been assembled for military service from all parts of the world, and soldiers from centers in which certain diseases have been epidemic have mingled with others and spread the germs of disease among them; upon demobilization, these infected men have gone back to their homes or have wandered about in various countries, carrying with them the germs of infection. Among the diseases to be watched is typhus; the last week of August and the month of September showed about seventy-five cases in Germany, three in Vienna, and a few scattered cases in and about Genoa. At the same time there was an outbreak of smallpox in Germany, with about one hundred and sixty cases, and in addition, there were seven cases in Vienna and five in Hungary. The dangers of amoebic dysentery seem to be particularly great, as in Prussia during the month of September there were about five thousand cases with one death in ten, and in Vienna there were approximately seven hundred cases with one death in three.

In order to protect themselves from the spread of the disease, a number of countries have taken the precaution to declare quarantine against certain ports. Denmark has declared quarantine against Finnish ports on the Baltic, Egypt against arrivals from Salonica, Constantinople and Smyrna, and France against a number of countries. A great part of the quarantine is on account of the plague, which is reported to have spread widely in the first half of the year 1919 through Egypt, Arabia, some provinces of China, the British possessions in India, the Dutch East Indies, Turkey, and in some of the islands of the Pacific. It is feared also that cholera may penetrate into Europe. Up to the middle of September, about one hundred and thirty thousand deaths from this disease occurred in British India, five thousand deaths out of sixty-five cases in Java, and forty-seven deaths out of sixty-seven cases in the Philippines. These figures indicate clearly the danger of spread of infectious diseases and give evidence that the care and quarantines of the Western nations are not without reason.

BOSTON AND MASSACHUSETTS.

Week's Death Rate in Boston.—During the week ending Jan. 10, 1920, the number of deaths reported was 255 against 478 last year, with a rate of 16.45 against 31.30 last year. There were 45 deaths under one year of age against 55 last year.

The number of cases of principal reportable diseases were: Diphtheria, 48; scarlet fever, 65; measles, 254; whooping cough, 59; typhoid fever, 3; tuberculosis, 47.

Included in the above were the following cases of non-residents: Diphtheria, 11; scarlet fever, 17; measles, 2; whooping cough, 1; typhoid fever 1; tuberculosis, 4.

Total deaths from these diseases were: Diphtheria, 6; scarlet fever, 2; measles, 1; whooping cough, 6; tuberculosis, 16.

Included in the above were the following non-residents: Diphtheria, 5; scarlet fever, 1.

Influenza cases, 27; influenza deaths, 1.

Lawrence Hospital.—Dr. Thomas H. Joyce, at present resident physician at the hospital, has been appointed superintendent of the Lawrence Hospital. Dr. Joseph A. Bacon will succeed Dr. Joyce as resident physician.

The Lawrence Hospital has received recently the sum of five thousand dollars, by the will of the late Miss Kate T. Kimball.

Gift to the Boston Floating Hospital.—A bequest of three thousand dollars to the Boston Floating Hospital was included in the will of the late Henry K. Mansfield of Salem.

Public Bequests.—The will of the late Nellie A. Dexter of Norwood includes bequests of five thousand dollars to the following societies and institutions: Boston Home for Incurables, Boston Nursery for Blind Babies, Industrial School for Crippled Children, New England Peabody Home for Crippled Children, the Free Hospital for Women, Brookline, and the Convalescent Home for Children, Wellesley.

Gifts to Hospitals.—By the will of the late Caroline S. Freeman of Weston, the Boston Lying-In Hospital will receive $25,000; the Children's Hospital $10,000; the Convalescent Home of the Children's Hospital, $10,000; the Baldwinville Cottage Hospital for Children, $5,000. Upon the death of relatives, one-fourth of a trust fund of $175,000 will be given to the Harvard Medical School.

Tribute to Dr. Hugh Cabot.—The trustees of the New England Baptist Hospital recently gave a banquet at the Hotel Vendome in honor of Dr. Hugh Cabot, who has been at the head of the surgical staff of the Baptist Hospital for twenty years. Dr. Cabot has accepted an appointment as chief professor of surgery in the University of Michigan. Tribute was paid to the estimable service rendered by Dr. Cabot in this country and in France by Colonel Edward H. Haskell, Dr. S. C. Badger, and Dr. Young.

The New England Baptist Hospital.—The sum of five hundred thousand dollars is to be invested in a new building for the New England Baptist Hospital in Roxbury. It has been proposed that construction of this building be begun in the spring, and that the bungalow type of hospital be approximated as nearly as possible.

Springfield Academy of Medicine.—A meeting of the Springfield Academy of Medicine was held in Springfield on Tuesday, January 13, 1920. An address, "Industrial Medicine," was delivered by Dr. W. Irving Clark, Jr., of Worcester.

At the February meeting the address will be given by Dr. Daniel F. Jones of Boston.

Decrease in Quincy Mortality Rate.—The statistics for the year 1919 show a considerable decrease in the mortality rate in Quincy during the past year. The deaths in 1919 totaled 446, against 847 in 1918, a decrease of 401. The high rate in 1918 was due in part to the influenza epidemic. In 1919, in spite of the fact that there were deaths from influenza in the first three months, the death rate for those months was lower than for the first three months of 1917, when conditions were normal. During 1919 there were 32 deaths from accidents, three from suicide, only one from typhoid fever, four from diphtheria, thirty-six from tuberculosis, and seventy-one from heart disease.

Influenza in Boston.—During the week ending January 10, there were reported to the Health Department of Boston twenty-seven cases of influenza and one death from that disease. In the corresponding week last year there were reported 1626 cases and 190 deaths. There were twenty-seven deaths from pneumonia this year, as compared with thirty-seven in the corresponding week of last year.

Election of Dr. Mary E. Mosher.—Dr. Mary E. Mosher of Roxbury has been elected president of the Massachusetts Surgical and Gynecological Society, a large organization which has members coming from all parts of the state, among them some of the leading surgeons of Massachusetts. Dr. Mosher has been a member of the Society for twenty-eight years, and was one of the first women to be admitted to the Society.

NEW ENGLAND NOTES.

Augusta General Hospital.—It is expected that the work on the construction of the new wing of the Augusta General Hospital in Maine will be completed and ready for occupancy in March, 1920. In 1917, the sum of $25,000 was raised in order to enlarge the facilities of the hospital, but because of the war, it was necessary to postpone the construction of the new building. The new wing which is now under construction will have three stories and a basement, and will be built of steel and tile, with no wood work except in the window fixtures and the half-way panellings. It is situated slightly toward the rear of the main building and is ninety-six feet long and forty feet wide. In the basement will be the dining-rooms, a storeroom, a refrigerator plant, and the main kitchen. On the first floor will be the office of the superintendent of nurses and several small wards. On the second floor there will be a number of private rooms, nine on the west side and four on the east. All the surgical work will be done on the third floor, where there will be three operating rooms, two for general cases and one for special cases, and x-ray room, and a sun porch. The new building will be provided with all modern hospital equipment.

War Relief Funds.—The New England Branch of the French Orphanage Fund has acknowledged contributions to the total amount of $545,796.58. The sum of $285,667.79 has been contributed to the New England Branch of the French Wounded Fund for the American Hospital at Rheims.

The Massachusetts Medical Society.

MEETING OF JOINT COMMITTEE ON LEGISLATION OF THE MASSACHUSETTS MEDICAL SOCIETY AND THE MASSACHUSETTS HOMEOPATHIC MEDICAL SOCIETY, DECEMBER 30, 1919.

A meeting of the joint committee on legislation of the Massachusetts Medical Society and of the Massachusetts Homeopathic Medical Society was held at the Boston Medical Library, on December 30, 1919, at 12 o'clock. The auxiliary members of the committee, representing both societies, were invited to be present. About forty members from all parts of the State attended. Dr. Alfred Worcester, chairman of the committee, presided and outlined to the committee the work for the coming year. He stated that every effort would be made to keep the members informed of proposed legislation, and of the progress of bills in the Legislature. This would be done by letter, through the Bos-

TON MEDICAL AND SURGICAL JOURNAL, and through the District Medical Societies, and various medical clubs.

The first specific matter which was considered was the vaccination laws. It was unanimously voted to support legislation making vaccination compulsory in private as well as in public schools, and it was further unanimously voted that a certificate from a physician, stating that vaccination would be dangerous to any individual, should be good for a period of one year only. The members of the Auxiliary Committee were urged to bring the facts in regard to vaccinations before the individual legislators. Dr. Worcester mentioned the experience of Dr. Heiser in the Philippines, where he reported over ten million vaccinations without any disastrous results, in a region where there had previously been forty thousand deaths from smallpox annually.

The next matter considered was that of maternity benefits. The provisions of House Bill No. 1902, printed as a House document in July, 1919, commonly known as the Young Bill, were explained. In this bill it is proposed that the State Department of Health provide medical and nursing care, which of course implies care which the Board of Health endorses as proper. The bill, however, provides for a free choice of physicians on the part of the patient. Considerable discussion followed in regard to the provisions of this bill. Dr. W. P. Bowers pointed out that at the present time, in many obstetrical cases, no physician was in attendance, and that there were about 500 midwives practicing in the state. No definite action was taken in reference to the matter of maternity benefits, as the final terms of any bill to be presented were not yet determined.

Matters of child health legislation were next considered. The Massachusetts Civic League favors measures to provide school nurses and school physicians everywhere, with a director of physical education. It was voted to favor such legislation.

Dr. Bowers presented the bill which would be introduced by the joint committee on education of the state societies, which would provide for a minimum education preparatory to the study of medicine. Such a bill would prevent the examination, by the State Board of Registration in Medicine of improperly educated candidates. The bill proposed is supported by the osteopaths, also. Dr. Bowers pointed out that such a bill, in order to succeed, must be supported by others than physicians. It was voted to support the proposed legislation.

Dr. Worcester stated that measures were under consideration, directed against unjust malpractice suits. No definite bill has, as yet, been presented, but approval of any proper bill, making unjust suits difficult to prosecute, was voted.

In regard to the drinking of Jamaica ginger, it was considered that no action was necessary, as constitutional prohibition would, when effective, take care of this matter.

Dr. F. W. Anthony brought up a matter of industrial insurance, and stated that a case was before the courts to decide the definition of the term "unusual case." As it appeared that the matter was one of interest to the whole medical profession, it was suggested that counsel be employed to represent the medical profession, as a party in interest, in this test case. The matter was left to the committee on industrial insurance.

Dr. Bowers brought up the proposition for the temporary registration of house officers in hospitals. Approval of the plan was voted. Dr. Bowers also brought up the matter of medical students assisting in the care of obstetrical cases, and stated that the present law forbade the association of registered physicians with those not registered. He asked that steps be taken to bring absolutely within the law the proper instruction of medical students.

JAMES S. STONE,
Secretary.

Miscellany.

EMMA B. CULBERTSON, A.M., M.D.

EMMA B. CULBERTSON, M.D., a member of the Staff of the New England Hospital for Women and Children since 1883, died at St. Petersburg, Fla., January 8, 1920.

Dr. Culbertson was well known as one of the prominent Boston surgeons for many years, a member of the American College of Surgeons, the American Medical Association, the Massachusetts Medical Society, National Women's Medical Association, Women's City Club of Boston, and other organizations, interested in all movements for the advancement of women.

Be It Resolved, That we, her colleagues at the New England Hospital for Women and Children, deplore her loss.

We shall miss the inspiration that her constant enthusiasm and untiring service have been to us in our daily work.

For the Medical Staff of the Hospital,
Emily F. Pope, *Sec'y.*

Correspondence.

SIZE AND MANAGEMENT OF STATE HOSPITALS.

Talmadge, Calif., Dec. 28, 1919.

Mr. Editor:—

I beg the opportunity of replying to an article of September 20 by Dr. May, Medical Superintendent of the Boston State Hospital, covering two points—the proper size of a state hospital, and the economy of management. Having been connected with army hospitals for ten years, having also been connected with one mental hospital of three thousand patients, another of six thousand, and at the present time being in charge of a hospital of twelve hundred patients, I feel that I have some qualifications to write on this subject.

1. The object of a mental hospital is generally considered to be: First, the care of the mental patients; second, the economy of administration. On the other hand, it is not the care of the family of mental patients.

2. It is generally considered that the mental treatment, as apart from the physical treatment, of these cases means removal from the source of mental irritation, mental rest with relief from responsibility, gradual readjustment to an ordinary environment. This means individual study of each case, since the point of view is necessarily personal. In a mental hospital of from four to six thousand beds, it has always necessarily meant a delegating and dividing of authority with subordinates. Even when dealing with more than twenty-four hundred, the organization developed has necessarily become artificial and impersonal. Practically, the patients come in contact with the under-paid assistant physician who sees daily from three to six hundred patients. If an adequate salary for adequate treatment is paid there is no saving in the so-called over-head expense of management. While there is some argument regarding the interests and claims of the patients in hospitals of fifteen hundred and three thousand respectively, there is no argument favoring the patients' interests of between three thousand and six thousand bed hospitals. In the latter case too few patients' interests are considered. You really have a group of hospitals—not one hospital—wherein, of course, there is no economy.

3. A study of hospitals in various places in the United States will show that the cost of maintenance (the service and care being the same) will vary directly with what the hospital can produce. Therefore it seems evident that only the smaller mental hospitals have a place in a large metropolitan centre such as Boston. When you speak of an outlying farm you mean a group of patients removed from the best means of treatment and presumably considered chronic, hopeless insane. Certainly occupational therapy is teaching us something else. One does not speak now of chronic, hopeless insane.

4. The history of desirable sizes for mental hospitals is interesting in this connection. In California, of the six hospitals, three contain twenty-four hundred beds only, and there is no intention of increasing the size, while three contain from twelve to sixteen hundred only. In Cincinnati, Ohio, Long View Hospital was originally a county or a city hospital. It has been found advisable to make it a state hospital to relieve the county of the excessive burden of maintenance. In New York it has always been the understanding that the enormous hospitals near New York or in New York were a regrettable necessity. At any rate, they have always acted rather as clearing hospitals, and patients were constantly being transferred to up-state hospitals.

5. The fact that reatives of patients in Massachusetts would be obliged to travel twenty-five or thirty miles to see patients does not seem very important, especially as it is obvious from the standpoint of mental treatment that one often wishes to remove patients from irritating family environment until the social worker can secure some readjustment. Surely a patient has an origin in environment and treatment is complete only if the environment is first removed and then rebuilt as far as possible.

Very truly yours,
Robert Lewis Richards, *Medical Supt.,*
Mendocino State Hospital.

POISONOUS GASES IN WARFARE.

Boston, January 8, 1920.

Mr. Editor:—

The report of the Surgeon-General, U.S.A., contains a paragraph which has received considerable attention in the press and now appears in the Boston Medical and Surgical Journal without comment. This paragraph states that "poison gas is one of the most humane weapons of war." Lest it appear that the profession of medicine endorses this statement will you kindly give space to this communication?

The Surgeon-General bases his statement, presumably, on statistics of the U. S. Army covering only the last 200 days of the war. In this connection it should be clearly pointed out, first, that our army went into the fighting best equipped with the protection of gas-masks and training against this means of warfare. It is also known that the supplies of poisonous gases of the Huns at this time (1918) were low, so that the use of such by them had greatly lessened. Instead of asphyxiating gases, such as chlorine, phosgene, and prussic acid, the mild type of poison gases, such as "mustard" and "tear" gases and smoke were more used. Their object was to reduce the efficiency of our troops. It is not clear that these produced any casualties, but it is true that large numbers of "mustard gas" burns —the delayed action of this gas, which was never fatal—caused in this period of the war very many casualties in which the mortality was nil.

On the other hand, let us refer to the casualties from poisonous gases early in the war. Chlorine was first used by the Hun in April, 1915, against the Canadians at Ypres. The surprise of this attack, used contrary to the Hague Convention, as signed by Germany, caused 5,000 deaths, according to official German reports. Hun officials also claim that their use of poisonous gases between April, 1915, and August, 1916, caused the death of about 35,000 men, largely British.

Had the Surgeon-General seen, as the writer has, the effects of poisonous gases on soldiers in 1915—the agony and lingering deaths of the men who met those first attacks—he must have hesitated to use the word "humane." Their suffering and deaths, as they gasped for breath, blue in the face, coughing and struggling for air, can never be forgotten.

If the limited period of six months of our contact with the enemy is to bring statistics to the up-to-date conditions (because the conduct of war has changed almost instantly during the past five years) how will his conclusion be altered when the deadly carbon monoxide is used, against which there is no known protection?

Some believe the end of war may come through what Marshal Foch calls "theories or leagues of improbable stability;" some that further inventions of unbridled fiendishness will make war impossible. Both underrate the human element in the extremes, on the one and, of perfidy, and, on the other, of valor which nothing can defeat. If there is no reasonable ground for hope that the use of poisonous gases will bring about the end of war, is it not for the profession of medicine to repudiate the idea that asphyxiating poisonous gases can be called "humane" or decent weapons of war?

It is to be hoped that while our Chemical Warfare Service must keep in the advance of the field in the art and knowledge of gas attack and defense, yet our army may never again be forced by an unscrupulous foe to use poisonous asphyxiating gases.

Charles S. Butler, M.D.

"PALMAM QUI MERUIT FERAT."

Boston, Mass., Jan. 15, 1920.

Mr. Editor:—

In your last issue of the Journal the writer of the notice of a talk by me before the Massachusetts Therapeutic Massage Association to occur on January 20, makes me masquerade under the title of "Professor Emeritus of Clinical Medicine at Harvard Medical School." I never had that title and it does great injustice to Dr. Frederick C. Shattuck who for several years has most worthily held it and, please God, will continue to do so for many years to come.

If you will kindly insert this in your next issue you will greatly oblige. Yours truly,

Elbridge G. Cutler, M.D.

SOCIETY NOTICES

The American Dietetic Association.—The next annual meeting of the American Dietetic Association will be held in New York City, October 22, 23, 25, and 26, 1920. Plans under consideration now promise to make this one of the most worth while meetings of interest to all groups of people whose special work is allied with nutrition and dietetics.

The officers of the organization are: President, Lulu Graves, Professor of Home Economics, Cornell University, Ithaca, N. Y., Editor of the Department of Dietetics, *The Modern Hospital;* First Vice-President, Ruth Wheeler, Goucher College, Baltimore, Md.; Second Vice-President, Marguerite Deaver, Mt. Sinai Hospital, Cleveland, Ohio; Secretary, E. M. Geraghty, New Haven Hospital, New Haven, Conn.; Treasurer, Margaret Sawyer, Bureau of Dietitian Service, American Red Cross, Washington, D. C.

Suffolk District Medical Society, Surgical Section.—The next meeting of the Surgical Section, Suffolk District Medical Society, will be held on February 18, 1920, at 8.15 p.m., at the Boston Medical Library. Dr. John A. Hartwell, Clinical Professor of Surgery, Cornell University Medical College, and Director of Surgery, Bellevue Hospital, will present a paper. Subject, "Abscess of the Lung." A discussion will follow the reading of the paper. It is hoped that all those present will participate.

Richard H. Miller, *Secretary.*

Massachusetts Society of Examining Physicians.—The dinner and meeting of the Massachusetts Society of Examining Physicians will be held at the Copley-Plaza on Tuesday evening, February 10. Dinner at 7, meeting at 8 o'clock.

The speaker will be Dr. Alice Hamilton, Assistant Professor of Industrial Hygiene at Harvard Medical School, whose topic is "Dangerous Trades." Discussion by Dr. W. F. Boos and Dr. Timothy Leary will follow. William Pearce Coues, M.D., *Secretary.*

NOTICE.

GOVERNMENT POSITIONS IN OCCUPATIONAL THERAPY.

The United States Civil Service Commission has announced examinations for field supervisor of reconstruction aides in occupational therapy, at $1,800 a year; superintendent of aides in occupational therapy, at $2,400 a year; special instructor in occupational therapy, at salaries ranging from $1,200 to $3,500 a year, and reconstruction aide, at salaries from $720 to $960 a year. Reconstruction aides will also receive quarters, subsistence, and laundry. Appointees to all positions whose compensation does not exceed $2,500 a year will receive the increase of $20 a month granted by Congress if their services prove satisfactory. In all, about 500 positions in the Public Health Service throughout the United States, and at St. Elizabeths Hospital (insane), Washington, D. C., will be filled.

The examinations for field supervisor of reconstruction aides and superintendent of aides will be held on February 24. The other examinations will be open until further notice. Both men and women, if qualified, will be admitted, but appointing officers have the legal right to specify the sex desired when requesting certification of eligibles.

None of the examinations require competitors to assemble in an examination room for tests. The ratings will be based upon the elements of education, training, and experience, and upon a written discussion on one of a number of given topics connected with the work.

Further information and application blanks may be obtained from the representative of the Civil Service Commission at the post office or customhouse in any important city, or by communicating with the United States Civil Service Commission, Washington, D. C.

RECENT DEATHS.

Dr. Neidhard Hahnemann Houghton, of Brookline, was struck by an electric car on Beacon street in that town, December 26, 1919, and died shortly after at the Massachusetts Homeopathic Hospital.

Dr. Houghton was born in Barnet, Vt., Aug. 10, 1861, and was the son of Milo G. Houghton and Rosetta M. Sergeant Houghton. In 1887 he was graduated from the New York Homeopathic Medical College and Hospital and in that same year commenced practicing his profession in Boston. He was associate professor of diseases of the throat and nose in the Boston University School of Medicine.

Dr. Houghton held membership in the American Institute of Homeopathy, the Massachusetts Medical Society, the Massachusetts Homeopathic Medical Society, and the Boston Art Club.

His wife, who was Miss Mary L. Hazen of St. Johnsbury, Vt., and whom he married in 1892, survives him, together with three daughters.

Dr. Emma Valeria Pintard Bicknell Culbertson died while on a trip to Florida, at St. Petersburg, in that state, January 8, 1920, at the age of 65.

She was a graduate of Vassar College and the Women's Medical College of Pennsylvania in 1881, and had been a member of the staff of the New England Hospital for Women and Children, in Boston, since 1883, and surgeon on the staff since 1892. At the time of her death she was senior surgeon.

She was a member of the American College of Surgeons, the American Medical Association, Massachusetts Medical Society, and many other organizations. She was passing the winter in Florida with her friend of many years' standing, Dr. Mary A. Smith, with whom she lived at 33 Newbury Street, Boston.

She was born in New Albany, Ind., the daughter of John P. and M. C. Culbertson, both deceased. She is survived by a niece and a nephew.

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THE SURGICAL TREATMENT OF PEPTIC ULCER.*

BY P. E. TRUESDALE, M.D., FALL RIVER, MASS.

MANY phases of the subject of peptic ulcer remain unsettled and a growing border of the profession is seeking practical knowledge in regard to it. Both medical and surgical branches of practice treat the disease and both are vitally concerned in all features of its development and control.

Certain facts about peptic ulcer have been rendered from the vast amount of clinical material studied in the operating room and in the laboratory. We know from observation first made at the Mayo Clinic that, contrary to popular belief, about 70% of all peptic ulcers are duodenal or involve the duodenum; that a very small percentage of these occurs in the second portion of the duodenum; that nearly 70% of all gastric ulcers develop in the lesser curvature; that gastric ulcer undergoes malignant degeneration, the exact frequency of which may be open to debate, but the change itself is not disputed. We also know that ulcer of the duodenum very rarely degenerates into cancer; that compared to cancer of the stomach the incidence of cancer of the duodenum is about one to forty. We know that syphilitic ulcers of the stomach, usually multiple in number, are not uncommon; that hypertrophy of the pyloric musculature, sometimes obstructive in degree, develops in the presence of peptic ulcer. We know, too, that ulcer of the stomach or duodenum sometimes undergoes spontaneous cure; that its development is arrested, often permanently, by medical treatment; that when manifestations of non-syphilitic ulcer are prolonged, excision by the knife or cautery is the only method of cure.

These have become accepted facts, scarcely necessary to enumerate, yet of vital importance in the study of this fascinating subject, fascinating because perversions of gastric functions are very common and the pathology of the digestive tract affords immense interest to surgeons as well as to internists.

Although considerable progress has been made toward unmistakable recognition of ulcer and the treatment of certain types is well defined, nevertheless, the diversity of thought and activities bearing upon end results is sufficient evidence that our knowledge is incomplete, our investigations unfinished and our deductions not final. This is inevitable, in a measure, because the etiology of peptic ulcer remains undetermined.

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* Read before the Springfield Academy of Medicine, Oct. 14, 1919.

Simple ulcer has been produced experimentally in the stomach and we have learned something about its incidence and selective nature. But the difficulties in producing chronic ulcer have not been surmounted and it is chronic ulcer with which we are confronted in practice. Incipient ulcer of the stomach and duodenum is rarely observed clinically. As a rule the early stage is borne by the patient without appealing for medical aid. Billings has stated that the disease is often latent even in the chronic form, perforations sometimes being the first sign of real trouble.

Acute symptoms of peptic ulcer generally signify acute exacerbation of a lesion that is chronic. Frequently patients fail to remember the exact time of onset of symptoms. As we see them it is very rare that the duration of the ulcer history is less than one year. The average duration of symptoms was found to be 7½ years in a review of 27 cases in which pylorectomy for ulcer was done in this clinic.

The treatment almost universally applied today is medical during the early stages. When medical treatment and rest have been tried for weeks or months and the symptoms fail to yield to such measures or return after short periods of relief, the problem of dealing with the disease falls into the category of surgery. This arrangement works out most satisfactorily because a reasonable trial of medical treatment should be given, and when that fails the potential risks of ulcer from hemorrhage, perforation, and malignant degeneration must not be ignored.

The surgical treatment consists first of all in a careful review of the clinical and laboratory record of the case. After considering this evidence the first step in the operation is to establish the diagnosis by direct examination of the stomach and duodenum through an abdominal incision. This is not always an easy thing to do because other changes often exist at the pylorus which may be mistaken for ulcer. The most common of these is a thickening at the pyloric ring from hypertrophy of the pyloric sphincter muscle or the adjacent musculature of the pylorus. This increase in the muscle size is functional and a result of continued spasm, or it may be of congenital origin. It may be due to causes that are adjacent or remote in the digestive tract, and is frequently present in the absence of ulcer. We have observed a very perceptible thickening at the pylorus in the presence of no other discoverable lesion than chronic appendicitis. It is fairly common with patients who suffer from gall stones, intestinal stricture, etc. To a mind that fully expects to find ulcer, a thickened muscle at the pylorus is quite liable to be satisfactory evidence that ulcer does exist in the thickened tissue although no scar is visible. This error does not happen as often as it used to but it is made now. William Mayo and John C. Munroe admonished repeatedly against accepting as ulcer any local change that did not show a definite scar visible to a bystander.

Pericholecystitis with adhesion of the gall bladder to the pylorus or duodenum, with thickening and induration of the gut, may be mistaken for ulcer. I removed the gall bladder in such a case and failing to find more than a moderate cholecystitis I excised a thickened and adherent pylorus, in one area of which I believed an ulcer existed, but the pathologist could find no ulcer in the specimen. The lesson learned was that whenever ulcer is present the signs are definite, not indefinite. Whenever one is in doubt over some indefinite tissue change, it is more judicious not to interfere. Where simple gastroenterostomy or pyloroplasty is performed for ulcer, the suspected tissue is not submitted for examination, and submitting the specimen for which the operation was done to the pathologist is the one satisfactory method of checking up the diagnosis.

In view of the tendency of the ulcer to perforate and bleed, as reported by Rodman, in the clinics of Mayo, Kocher, Von Eiselsberg, Kort, and others, gastroenterostomy is now supplemented by excision of the ulcer when it is accessible. Ulcer of the stomach is excised by the knife or cautery in every case.

The technique in the use of the cautery for this purpose has been described by Balfour. It may be used for the obliteration of peptic ulcer wherever located, but it is indicated in a group of cases where the ulcer is high on the lesser curvature. As a supplementary operation to excision, gastroenterostomy is sometimes done and sometimes not, depending upon the patency of the pylorus and the amount of deformity produced in the excision of the ulcer itself.

Whenever the ulcer is in the pyloric end of the stomach, and the condition of the patient permits, pylorectomy is the operation of choice. Unfortunately this procedure is indicated frequently in the worst cases when, for example, the ulcer is the center of an inflammatory area involving the head of the pancreas, the gastrohepatic omentum, and occasionally the colon, gall bladder and the under surface of the liver. While these conditions do not prevail in most cases, they are frequent enough and severely tax one's judgment in determining the extent of interference which can be carried out with a fair margin of safety.

Under adverse conditions it is more prudent to do the operation in two stages. Having relieved the pyloric obstruction by gastro-enterostomy, both the general condition of the patient and the local condition will improve rapidly. Occasionally by this method there is a strong inclination on the part of the patient not to have the second stage done. After the gastroenterostomy he is promptly relieved and his condition soon becomes most satisfactory, so he may decide not to undergo the second operation.

Case No. 3961 among our records illustrates the danger incurred by deferring the second stage operation. This patient, aged 37, entered the hospital with pyloric obstruction in January, 1919. He was in bad general condition and the complete operation was not undertaken. Gastroenterostomy only was done. Relief was immediate and the progress of the patient continued satisfactorily as usual in such cases. He decided to postpone the second stage operation and left the hospital stating that he would return upon the slightest evidence of trouble. Nine months later he returned with cancer of the pylorus, extensive and inoperable. To the naked eye, at the time of the operation in January, the mass at the pylorus had the appearance of ulcer. The process was localized. No glands were observed in the environment of the pylorus. A section of the lesion was not taken for pathological examination because we expected to have an opportunity to remove the pylorus within two weeks, and I am reluctant to cut into tissue that may be cancerous because the danger of engrafting cancer cells upon the adjacent peritoneum is by no means negligible. I have found it a troublesome procedure to get a section of an ulcer deep enough to show with certainty the true character of the tissue. Besides, failing to find cancer cells in a specimen removed from the ulcer margin or in an adjacent gland is not conclusive evidence that the central lesion is not cancer. But in this case a section would have been worth the trouble and the risk in order to obtain the only means of determining the true character of the lesion. If the patient had known that he had cancer he would have submitted to the second operation. We gave him the impression that the lesion was ulcer, bearing cancer risks, and he was willing to take chances on that possibility. This case demonstrates the fact, too, that cancer at the pylorus can develop rapidly and extensively without producing annoying symptoms if there is no mechanical obstruction to the passage of food.

J. M., aged 47, was admitted to our hospital on November 23, 1919, on account of obstruction to the passage of food from the stomach. Simple gastroenterostomy had been done five months previous with immediate good results. By the fluoroscope we observed bismuth passing out of the stoma in restricted quantity. The pylorus was apparently closed. The surgeon who had done the gastroenterostomy assured me that when he operated, the lesion at the pylorus was to all appearances ulcer. It seemed likely, therefore, that the present difficulty was due to partial closure of the stoma. Upon opening the peritoneal cavity the diagnosis was revealed by the presence of numerous hard nodes in the gastro colic omentum and multiple grafts upon the peritoneum contiguous to the incised peritoneum. Microscopic examination of a section from one of these showed glandular type of carcinoma. The interval between the two operations as stated above was five months.

The following case is of interest as a surgical problem because of the hour-glass condition produced by the ulcer on the lesser curvature, and the partial obstruction of the pylorus by muscle overgrowth. Ulcer in this area calls for one of the following operations: (1) Gastroenterostomy, (2) gastroplasty, (3) gastrogastrostomy, (4) partial gastrectomy by resection of the middle zone of the stomach, (5) excision of the ulcer supplemented by gastroenterostomy, (6) wide resection of the pylorus by the technic of Polya. I chose the last method because of the narrowing of the stomach just

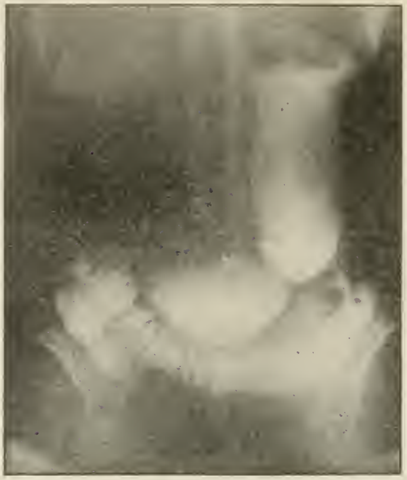

Fig. 1.—M. C. B., Feb. 26, 1915, showing hour-glass stomach with bismuth in each sac.

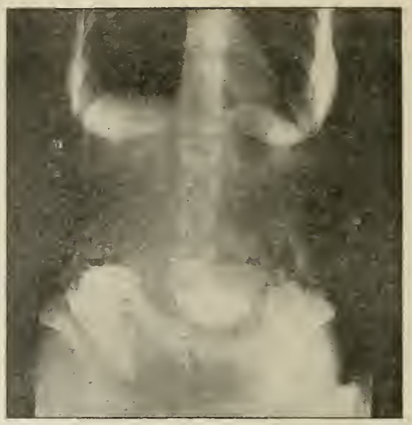

Fig. 2.—A residue after six hours is shown in the lower sac of the hour-glass stomach.

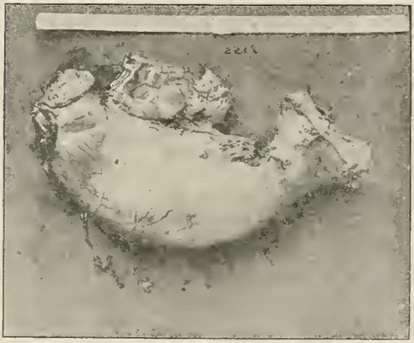

Fig. 3.—The distal portion of the stomach, including the ulcer area and the pylorus removed at operation.

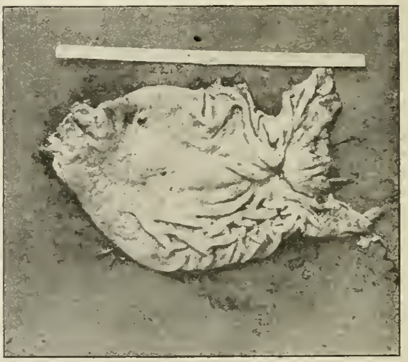

Fig. 4.—Specimen shown in Fig. 3 laid open exposing the ulcer and the pylorus.

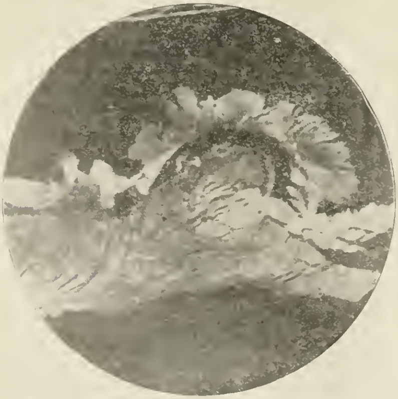

Fig. 5. Photomicrograph of a longitudinal section made through the pylorus, showing hypertrophy of the pyloric sphincter muscle and the adjacent musculature on the gastric side.

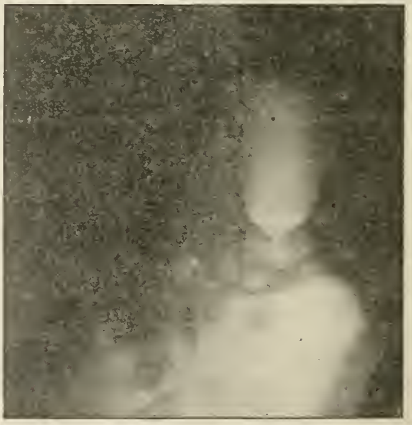

Fig. 6.—Bismuth passing out of the stomach. Plate taken six months after operation.

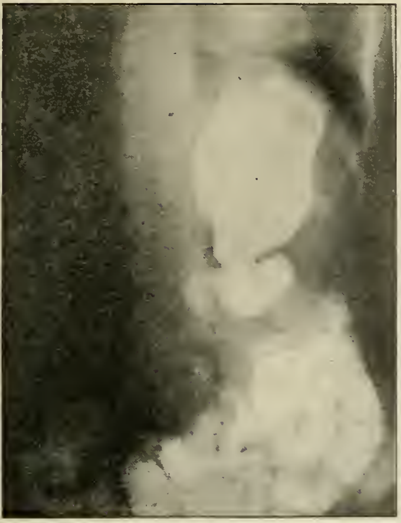

Fig. 7.—Bismuth passing out of the stomach. Plate taken four years after operation.

above the ulcer, making an end to side anastomosis simplified, the satisfactory results yielded almost invariably by this operation and the fact that both the ulcer and the thickened pylorus would be obtained for study. An abstract of the history is as follows:

Case No. 2218. Mrs. M. C. B., aged 53, came to the hospital on account of stomach trouble which had existed for seven years. Her mother died of tuberculosis; otherwise her family history was negative. She had typhoid at the age of 13. No other illness. Her indigestion took the form of upper gastric distress coming on from one-half to one hour after meals. She suffered from acid eructations. For the past few years, regularly about midnight, she had been obliged to take soda bicarbonate for relief. She had no relief from food but thought she was made rather worse from eating. She secured relief most successfully from the use of alkalies.

The operation revealed the condition shown by the x-ray (Figs. 1 and 2). The ulcer was located about midway on the lesser curvature. The pylorus was enlarged to a considerable degree; its peritoneum was smooth and no cicatrix could be seen. Pylorectomy was done, removing the ulcer area and the pylorus as shown in Figure 3.

The operation was done April 21, 1915. The patient is now well, being entirely free from any digestive disturbance. Six months after the operation her stomach functioned as shown in Figure 6 and four years after the operation as shown in Figure 7.

It is taken for granted that the motility of the stomach in this case was inhibited by the lesion on the lesser curvature. However, the hypertrophy of the muscle bundle at the pylorus formed a distinct tumor and without doubt was the main factor in the cause of stasis.

We have done pylorectomy for ulcer in 27 cases with but one death, which occurred from leakage of the duodenal stump. We now guard against this accident by the use of infolding linear sutures in two layers over the duodenal end; upon this is sutured a portion of the omentum.

A postoperative x-ray study of the first eight of these cases was made by Walter J. Dodd and reported in 1914. A postoperative x-ray study of the first seventeen of this series was made by Dr. J. H. Lindsey in January, 1917, in regard to which his article concluded by stating: "In general the efficient manner in which these stomachs perform their function at such long periods after operation testifies to the essential conservatism of an apparently radical operation. A further study of the remaining ten cases justifies one in stating that few, if any, operations in surgery are more permanently beneficial to the patient than pylorectomy, carried out in a selected group of cases of peptic ulcer."

Up to a few years ago the operation of pylorectomy was supplemented by a posterior gastrojejunostomy done as the first step in the operation, or occasionally in completing the operation. Later the Polya operation was adopted, which is an end to side anastomosis of the stomach with the jejunum. If amputation of the stomach was made near the pyloric ring the anastomotic opening in the jejunum to fit the cut end of the stomach would not exceed 5 or 6 cm. The stomach was converted into a funnel with the lower end passing through the meso-colon to which it was sutured. The Polya operation, then, appears to be well adapted to these cases in which section of the stomach is made near the pylorus.

Whenever the ulcer is situated high on the lesser curvature, amputation necessarily must be made somewhere through the middle zone of the stomach. This greatly alters the technic to follow. Inasmuch as the stomach is considerably shortened and the opening of the cut end very large, the suture line making an anastomotic opening with the jejunum must be above the opening in the mesocolon instead of below it. Here stricture has resulted, Dr. William Mayo having reported two cases. To avoid this contingency, Dr. Charles Mayo has modified the operation as follows: To the cut end of the stomach he attaches the jejunum, 18 inches from the ligament of Trite, anteriorly. When the union is completed the anastomotic opening adjoins the lesser curvature, and is no larger than 3 to 5 cm. I have carried out this technique only once but from that I can readily appreciate that this method is a step forward in practice.

There are technical difficulties, however, in making the anastomotic opening adjoin the lesser curvature, especially when the stomach is amputated in the prepyloric zone. The process of suturing may be far more difficult than it is when the opening with the jejunum is made at the lower border of the stomach because one may be obliged to work under the shelf made by the costal arch.

The number of clinicians and surgeons who believe that gastroenterostomy as a single procedure should never be the operation of choice is increasing. It is no exaggeration to state that the vast majority of internists are opposed to gastroenterostomy *per se*, yet, some who appear to be conscientious objectors to surgery in general favor radical surgery in dealing with chronic indurated peptic ulcer. For example. Dr. C. J. Johnson of Atlanta, Georgia, in 1917 made the following remarks: "Internists know that ulcers do get well without the knife and that after many years these patients have the appearance of comfort and health. On the other hand, it is true, that there is no successful treatment for some ulcers, or for the complications which they bring about, except operation."

It has been the universal experience that better results have been obtained by gastroenterostomy made in the presence of benign obstruction at the pylorus, and in this limited group of cases simple gastroenterostomy is a most useful and satisfactory therapeutic measure. But, in general, it may be said that operation for chronic ulcer cannot be applied by rule of thumb, and it is evident that the slowly shifting technique shows the ideal operation not vested in any procedure which leaves the ulcer.

The most satisfactory method of attack aims at excision of the ulcer in a way which does not "alter the complex relations of the alimentary functions and the more complex forces which maintain these functions." One principle of far-reaching importance is the fact that the alimentary tract is a one way passage. This is constituted a law at birth. Infringement upon its claims, either from disease or from the art to cure disease, is a bid for trouble. The multiplicity of short-circuiting operations for the relief of intestinal stasis affords ample proof of this contention. When operation is to be done what surgical and physiological principles are more simple and more rational than removing the disease and leaving the alimentary tract a one way passage? It should not be necessary for nature to put up arrows on the gastrointestinal tract to impress one with the wisdom of so planning his operation as to avoid the collision of food currents. When time and the condition of the patient permit, a technic which removes the lesion and leaves food currents passing in one way out of the stomach will be far less likely to "alter the complex relations of the alimentary functions and the more complex forces which maintain these functions"

Bibliography.

Mayo, C. H.: Annals of Surgery, August, 1919, p. 240.
Mayo, C. H.: Annals of Surgery, Vol. lxx, August, 1919, p. 236

TREATMENT OF BACK INJURIES WITH SPECIAL REFERENCE TO SPINAL FRACTURES THAT ARE NOT ASSOCIATED WITH CORD SYMPTOMS.

By Herman W. Marshall, M.D., Boston.

Surgical treatments for vertebral fractures without spinal cord symptoms were conceived and have been carried out successfully by different surgeons, so that they have to be considered now together with non-operative measures for fractures.

The data that originally suggested the feasibility of operative interference can be reviewed sufficiently from the following facts:

1. X-rays proved that vertebral fractures occur many more times than was supposed previ-

ously; and that numerous intractible so-called back sprains are in reality compression fractures of vertebrae without cord symptoms.

2. Successful transplantation of bone from one region of the body to another indicated the practicability of converting strips of bone which were taken from tibiae into reënforcing splints for the fractured sections of spines.

3. Accumulated clinical observations had demonstrated that spinal fractures, as they had been recognized, are serious injuries with prolonged or permanent impairment of back functions.

4. Patients testify unanimously that steel braces or jackets of leather and plaster are uncomfortable, restricting, and continually annoying.

Hopes were aroused, therefore, that spines might be strengthened permanently by grafting of bone along spinous vertebral processes, thus bridging over defective sections effectively enough to permit troublesome apparatus being dispensed with entirely. The medical profession owes a debt of gratitude to the surgeons who have had sufficient initiative and courage to prove these surgical methods can be of value in selected cases, and now we are in a position to inquire further into comparative merits of operative and non-operative treatments.

The following questions should be asked and answered as accurately as possible from clinical data and clinical impressions which have accumulated:

1. Are all spinal fractures without cord injury permanently crippling in serious degrees?

2. Precisely how much benefit is derived from spinal grafts? Are there any failures after surgical measures? Does surgery obviate always the subsequent use of mechanical braces?

3. What influences upon results of treatment have varying degrees of compression in the injured vertebrae and slight dislocations of fragments?

4. Can mechanical braces be improved so as to minimize their objectionable features?

Question 1. The first bit of evidence bearing on the first question, namely, whether all spinal fractures without cord injury are permanently crippling to serious degrees is offered in the following case:

A middle-aged laborer in good general health sustained an impacted fracture of a lumbar vertebra by having a bale of hay drop on him from several stories above, while he was passing along on the sidewalk beneath. The bale hit him squarely on the shoulders and the force of the blow impacted the body of the lumbar vertebra to a degree represented by one-third of its normal thickness, that is, the injured vertebra appeared to be about two-thirds as thick as the adjoining vertebrae immediately above and below it.

There followed a serious disability lasting approximately a year or more with final complete recovery, and the patient was seen first by the writer five years after the accident for a new complaint. The old fracture was identified incidentally at this examination in x-rays which were taken then, but no complaint was made of the fracture and its existence was not known to the patient himself.

This is the only case of such decided degree of crushing with perfect functional recovery, which has been observed by the writer in a series of thirty cases, upon which this paper is based.

The second case is that of a twenty-six-year-old man of rather delicate appearance. He weighed 117 pounds, was 5 feet, 5 inches tall, and he had dropped from the top of a twelve-foot step ladder, striking on the floor in sitting posture. An x-ray taken three weeks after his injury demonstrated a barely perceptible crushing of his eleventh dorsal vertebra; and at this time he had the strength of 50 pounds in a back strength test, which consisted in lifting on a dynamometer as he stood in slightly bent posture.

He refused to stop work wholly, although obliged to give up his regular occupation of electrician. He was the sole support of his family, and, with aid of a steel back brace, with considerable discomfort, he succeeded in continuing a part of each day as travelling agent for an electrical firm. Experiments proved that a steel brace was more comfortable for him than a plaster-of-paris jacket.

He ceased entirely to draw compensation from the insurance company that was paying him at the end of six months; and two years after his injury he had discarded all of his supports. He was made a member of the firm in which he worked and at this latter date he still noticed a little back weakness occasionally when playing with his children at home.

The third case is that of a twenty-four-year-old man, 125 pounds in weight, who was a yarn boy in a cotton mill. He fell onto the top of an ascending elevator and was doubled up against overhead beams when it reached the top as he remained in sitting posture. He fractured his twelfth dorsal vertebra to a very slight degree and was advised by an orthopedic surgeon to have a spinal graft inserted, but this advice was not followed. Three months after the injury, at the writer's examination, he had surprisingly good back function and could lift 320 pounds in a back strength test. A light steel support was made for him then and subsequently he was lost sight of.

If this third patient had received an operation and good results had been obtained, there is little doubt that the latter would have been attributed largely to the surgical treatment by the surgeon in attendance.

To the writer, the injury in this instance as well as in the second case cited, appears to have been more of musculo-ligamentous character than of serious bony nature. It is true these two cases can be classed as fractures of vertebrae and might appear in surgical statistics under certain circumstances as most brilliant results, yet it seems such interpretations should be accepted with reservations when the entire situations are considered.

From these few cases it is possible to say, however, that vertebral fractures are not necessarily permanently crippling always to serious degrees; and that healthy young subjects with slight fractures seem to have fair chances of good or complete recoveries.

Question 2. Precisely how much benefit is derived from spinal grafts? Are there any failures after surgical measures? Does surgery obviate always the subsequent use of mechanical braces?

The first part of this question can never be answered positively; because it is impossible to separate results of normal reparative processes always going on in injured spines from additional results simultaneously occurring that are due to reënforcements simply from inlaid grafts.

The best idea of the value of spinal grafts in the writer's opinion is to be obtained still from theoretical consideration of the situation mechanically, especially in so far as theoretical principles can be harmonized with dependable clinical results and interpretations.

Clinical evidence indicates that the fate of different spinal grafts is somewhat variable, and that not infrequently they are absorbed or replaced by non-bony tissue. Furthermore, from a mechanical viewpoint it is incomprehensible that strips of bone bridging spinous processes at a distance from crushed vertebral bodies will lessen pressures on these compressed cancellous front parts of the vertebrae very greatly. In subsequent forward bendings of the body crushed vertebral bodies must stand the same squeezing pressures as they did before injury; and possibly persistent pains and disability associated with fractured spines are not dissimilar in part to the pain and disability noted frequently in crushes of the os calces.

It is well understood that a severely crushed os calcis in a patient past middle age is frequently followed by persistent localized tenderness, also pain on walking for years afterward. Accordingly, it may be well to differentiate, at least two origins of pain in spinal fractures, namely, pain due to crushing of cancellous bone in vertebral bodies and, secondly, pain due to rupture or strains of the posterior group of spinal ligaments.

It is easily conceivable from a theoretical standpoint and also is not contradicted by clinical evidence, that inlaid grafts, whether they remain as bony bridges or fibrous ones, act as reënforcements to the group of posterior spinal ligaments and muscles. It is easy to believe in severe fractures with slight dislocations of fragments and much tearing of ligaments, that closely applied bone grafts at precise sites of injuries will strengthen spines in a manner which steel braces can never do on account of the latter being more remotely situated outside the body with no intimate attachments closely around the damaged areas.

But anterior spinal ligaments, however, which have been abnormally relaxed in severe crushes will remain so regardless of posterior spinal grafts; and presumably anterior ligaments are involved in the pains associated with cancellous bony defects in anterior parts of vertebrae.

The following case is instructive in the present connection:

A middle-aged Italian laborer fractured one of his upper lumbar vertebrae, but was not operated on for several years after his injury.

Soon after the accident, while in a partially disabled state, he was sent to jail for being implicated in the killing of another Italian. After serving a two-year sentence, during which period he was able to work regularly at a sitting occupation, according to jail authorities, he was examined anew. X-rays revealed the fractured vertebrae, and an operation on his back was performed and bone grafts inserted.

He was seen one year after this operation by the writer. At the latter time he wore no support and could lift 90 pounds in a back strength test. The operation wound had healed perfectly, but he claimed that he was weaker after his surgical experience than before it. A steel back support was fitted to him after the writer's examination. The brace made him feel considerably stronger, and he was better able to continue at regular light work in a cigar store.

Presumably somewhat more damage than good was done in this particular operation, although there was perfect healing of the wound. The injured muscles and ligaments had undergone reparative changes, and the damage done to them in clearing the surgical field for insertion of grafts was greater than the benefits derived from additional reënforcement of the inlaid bone. The case serves to emphasize the importance of musculo-ligamentous stays of the spine in contrast to anatomical variations or defects purely. It also illustrates the fact that braces sometimes are needed after operations.

The writer has seen less than a dozen operative results on non-tubercular spines, and cannot give precise statistics regarding the subsequent use of back braces; but all cases after surgical treatment have to wear plaster casts or some kind of support at least for brief periods, and a considerable proportion of them are obliged to wear mechanical appliances for prolonged periods subsequently. Furthermore, some of those who do not, presumably would be benefited by braces as was the patient whose case has just been cited. These facts, however, do not discredit operations in selected instances.

An answer to Question 2 can be made fairly as follows from observations on the whole group of thirty cases. It is impossible to estimate very precisely how much benefit is derived from spinal grafts, but they usually reenforce to a slight degree at least the posterior group of spinal ligaments. They do not prevent further painful pressures on crushed bodies of vertebrae. There is some danger that more damage than benefit will result from surgical operations through unavoidable cutting of posterior muscles and ligamentous attachments.

Mechanical supports are required for long periods after operations in a considerable proportion of cases, and the results of spinal grafting are not sufficiently perfect and complete to make additional benefits negligible which are secured through proper use of braces.

Question 3. What influences on results of treatment have varying degrees of compression in the injured vertebrae and slight dislocations of fragments?

This question has been answered indirectly in the two preceding ones. It is known now that all grades of bony injury occur, from tearing off of tiny particles of bone at ligamentous attachments to severe bony crushes and displacements which are accompanied by the beginning evidences of spinal cord compression and cord injury. The group of cases of spinal fractures without cord involvements therefore really is not a homogeneous one, but includes many different minor degrees of bony ligamentous defects.

The lesser injuries can be recovered from perfectly in healthy young adults in comparatively short time, with or without surgical treatment; and the more severe compressions with displacements of fragments are followed by more or less impairment of back strength permanently, whether operations are done or are not done. The most favorable cases for surgical methods, probably, are those with slight osseous damage and with extensive posterior ligamentous injury.

Question 4. Can mechanical braces be improved or used so as to minimize their objectionable features?

An affirmative answer can be made to this question; and discussions of details of construction of braces naturally merges into principles of their use, so both will be mentioned; and what is said of vertebral fractures is applicable in large measure to apparatus and principles of treatment used for the larger important group of back strains not associated with bony lesions.

An average efficient steel back brace consists essentially of two rods running up along each side of the spine from a pelvic steel base. It is commonly held in place by various straps and bands which encircle body, arms, and legs. The steel supports help to relieve back muscles and ligaments on the one hand and, secondly, they also prevent motions which may injure the osseous framework itself.

Shoulder straps and leg straps are made frequently in ways that interfere with arm and leg movements sufficiently to be sources of serious annoyance when much activity is attempted. The writer has attempted, therefore, to minimize these inconveniences as follows: In place of usual perineal straps which are required to keep some braces from slipping up, a very thin broad, flexible band of steel is made to encircle the pelvis completely and to conform accurately to its peculiarities. It is made of appropriate rigidity and elasticity to hold down attached upright bars as it grips the pelvis in a comfortable yielding way. In this manner legs are left practically free and unhampered.

At shoulders there is substituted a sternal piece of thin steel or firm inelastic fabric from which, at its upper corners, straps pass upward over shoulders to back steels and outward from its lower corners around sides of the chest under the axillae to the back brace. This arrangement is employed instead of straps closely encircling the shoulders. Pectoral muscles are left wholly unrestricted because the sternal piece covers only the sternum and because its outlines are curved to follow the curved insertions of pectoral muscles on the chest walls. Consequently there can be no irritating sawing action of straps across soft tissues at the shoulders.

Lateral and twisting spinal motions are controlled sufficiently by lateral steel uprights running up from the flexible pelvic steel band below. They terminate at the ends of an upper horizontal flexible steel band, which passes around the back of the chest from side to side and which is attached to all four upright pieces.

A very light steel cradle of considerable firmness and elasticity is thus formed for the flexible lumbar region of the spine and the body is held comfortably in it by anterior sternal straps, broad webbing straps encircling the chest and abdomen as needed and by the pelvic steel band below.

Patients prefer these simple braces to plaster-of-paris jackets or elaborate leather corsets and they are nearly as efficient as heavier, more rigid appliances.

Other details of seemingly trivial nature which nevertheless determine comfort and effectiveness of apparatus include selection of proper widths and gauges of steel for individual peculiarities of weight and strength. Adjustable features worthy of mention are those which permit easy replacements of heavier supporting rods by lighter ones without destruction of braces as patients become stronger and more normal.

All small improvements that collectively can be described as refinements of design and manufacture contribute to ultimate success of treatments similarly as increased breadth and clarity of conceptions of the medical problems in hand likewise lead to improved results.

There can be very little benefit derived, however, from hanging a finely constructed piece of apparatus on a patient if its possibilities and limitations are not understood, or if the doctor fails to convey adequate instructions and explanations to patients about proper use of their braces.

Some supports are fitted from directions sent out by large commercial concerns which make orthopedic corsets, jackets and other apparatus. Responsibilities for successes or failures in treatment nevertheless rightfully rest with attending physicians, not with makers of apparatus; and it does not appear to be most reputable practice to prescribe appliances without knowing how much harm they can do as well as benefits they are capable of yielding.

Patients with comfortable apparatus are liable to wear the latter until weakness or atrophy of muscles from disuse appears. Or if slight temporary discomforts are experienced there will be unwarranted discarding of supports although these may be the single vital requirements for most speedy recovery of strength and normal function.

Mechanical appliances are prescribed almost wholly from anatomical viewpoints in a considerable number of cases. There seems to be wide recognition of the disadvantages of bad postures and anatomical deformities and much less appreciation that muscles and ligaments possess important physiological peculiarities themselves; that they are designed especially to cope successfully with mechanical disadvantages and marked anatomical variations. Anatomic results of previously acting causes consequently command attention usually instead of functional causes of symptoms existing at times when treatments are received. Mechanical devices are blamed when the physicians themselves instead are at fault in not understanding the whole situation, and in not knowing precise possibilities and limitations of supports prescribed.

Physiological treatments of simple back strains and strains of ligaments and muscles associated with spinal fractures include use of braces; physical therapeutic measures; internal medical measures and general hygienic regulations that modify the quality of blood circulating through weakened back muscles and ligaments; and of exercises of varying degrees.

Successes or failures depend upon the manner with which these different physiological agents are combined and alternated. One of the commonest mistakes seems to be adherence to any single one kind of treatment. Braces are kept on continuously when instead there should be alternations with periods of graduated exercise; exercises and massage are given to muscles struggling with unfavorable vascular conditions so that under these circumstances these therapeutic measures delay returns to normal state again. Even with use of mechanical supports for low back strains there seems to be much chance for improvement. Numerous strains around lumbo-sacral and sacro-iliac regions are fitted with belts which reënforce the pelvis, yet that are very inefficient in protecting lumbo-sacral junctures from lateral and twisting movements.

There is no single brace or belt which fulfills all requirements completely of any situation very long and accordingly in the writer's opinion mechanical back appliances should be made of easily convertible character, *e.g.*, combination affairs which possess jacket features for restricting lumbar motions, with detachable belts which can be used alone to hold pelves tightly while allowing free lumbar bending.

Then by keeping in mind certain important physiological principles, namely, the need of alternate activity and rest in all tissues, also the general scheme in most cases which starts with more or less protection for muscles and ligaments followed by gradual diminutions in use of supports and gradual increase in normal functions, it is possible to prescribe belts or massage, jackets or manipulations or physical therapy, and internal medical regulations with increased efficiency.

CONCLUSIONS.

From study of thirty cases of vertebral fractures without cord symptoms and from a much larger series of simple back strains, the following facts and opinions have been arrived at:

Spinal bone grafts are suited best to well-to-do patients who will be considerably benefited by slight or moderate improvements in their physical conditions. Results of surgical methods are not beneficial enough uniformly; and chances of fair or excellent recoveries are so good in healthy young adults without operation, that spinal bone grafts are not warranted in the majority of workmen's cases.

Spinal grafts reënforce the posterior group of spinal ligaments and usually strengthen spines at least to slight degrees. There are some dangers that unavoidable injuries to muscles and ligaments which result from surgical procedures may weaken backs more than inlaid grafts strengthen them.

Mechanical appliances are required very commonly for considerable periods of time even after successful grafts; and results of this combination are presumably better often than either single method of treatment alone.

Slight degrees of bony fracture in healthy young subjects are fairly well recovered from without operation in six months or less at times; and severer grades of bony impactions occasionally are followed by complete restorations of back functions without operations several years after dates of injuries.

Causes of back symptoms and disability in vertebral fractures should be separated into two groups. The two causes are (1) ruptures or strains of posterior groups of spinal ligaments and muscles; (2) crushes of cancellous bodies of vertebrae with accompanying relaxations of anterior spinal ligaments. Spinal grafts presumably do not influence the symptoms greatly which originate in the second class of causes.

Mechanical braces often can be improved in details of manufacture so as to minimize their objectionable features; and while protecting injured back muscles, ligaments and bones still permit to a maximum degree usual functions of arms and legs.

Treatments of back injuries, perhaps, should be directed primarily toward restoring strengths in muscular and ligamentous tissues because these are phases of treatment which are usually overlooked and neglected; but pathological conditions in crushed vertebrae should be appropriately treated by immobilization and protection in ways universally approved in treatment of fractures.

The influence of bad postures and of other anatomical peculiarities upon existing symptoms in simple back strains should not be forgotten. Such postural variations usually represent the accumulated results of past musculo-ligamentous changes, but do not indicate functional states of muscular or ligamentous strengths at any specified time. Backs may be comparatively strong with very faulty attitudes or relatively weak with nearly perfect postures, depending on powers of supporting muscles and ligaments at the time to accommodate for anatomic requirements.

Treatments for musculo-ligamentous defects should include use of various therapeutic agents according to physiologic requirements of the tissues in question. There should be use of mechanical braces to reënforce muscles and to offset temporarily the extra mechanical strains due to faulty postures or anatomic deformities. Physical therapeutic agents, massage, manipulations, exercises should be employed as well as internal medical measures. The latter rectify vascular defects and influence muscles and ligaments through the qualities of circulating blood.

Continuous exclusive use of any one of these methods is unjustifiable for very long periods, and they should be alternated and combined with due regard to established physiological principles of alternate rest and activity known to be best for muscles and ligaments.

It is unjustifiable to prescribe mechanical apparatus without knowing accurately harmful as well as beneficial possibilities; and without explaining to patients adequately the functional goals which should be sought and those to be avoided among continually fluctuating states in muscles and ligaments. Use of mechanical apparatus ought to be conceded more generally to be a complicated important matter, which should not be lightly undertaken, bungled, and finally abandoned with unjust condemnation of these valuable therapeutic agents.

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SOME INCIDENTS IN THE LIFE AND MILITARY CAMPAIGNS OF BARON LARREY (1766-1842).

By William Pearce Coues, M.D., Boston.

At the present time a study of the life and accomplishments of the greatest of military surgeons has a peculiar interest. Though the name of Larrey is well known in America, and occasional articles concerning him have appeared in the journals of this country, it is hoped that some new facts of interest will be found in the following pages. Certainly the accomplishments of this great man, with the almost insurmountable obstacles he had to contend with, form a page of medical history which can well be compared with all the wonders of military surgery in the recent war.

A hundred years ago the constant battling with widespread and overwhelming infections which swept through armies like a conflagration, formed a very great part of the military surgeon's work. Larrey coped with many of these successfully, and proved himself a military hygienist of the highest order. This, combined with his great surgical genius, formed a combination of qualities which has never been excelled.

To many men who have arrived at such great distinction in their different callings there is denied the love and devotion of their fellow-beings, through certain defects of character which may be ascribed to the eccentricities of genius. Larrey, besides his great skill and untiring devotion to his work, was happy in possessing the esteem and even the adoration of his patients to a degree seldom equalled. To be sick or wounded, whether friend or foe, was the only qualification necessary to procure his attention and devotion. Indeed, at one period of his campaigns he almost lost his life, while attending English soldiers, ill of typhus. That this was not the only time that his life was in jeopardy will be seen as we follow his career through some of the thrilling incidents through which he passed. Unquestionably his great strength and rugged health enabled him to withstand much that would have killed or permanently disabled many another.

Through the scorching heat of the Libyan desert, with little food or water (most of which he gave to his wounded), on he went, operating, dressing the wounded, caring for the sick, and noting all for the great medical history of his campaigns. The scene changes: it is the retreat from Moscow; all through the disastrous march in the bitter cold Larrey was omnipresent, overseeing, warning the soldiers of sudden approach to the bivouac fires, which was certain death, procuring sustenance, cheering the wounded, and comforting the dying. The graphic depiction of these experiences, told with a modesty and charm difficult of description, must be read at first hand in his "Mémoires et Campagnes Militaires" to be fully appreciated.

We will now turn to a more detailed account of the life of Larrey, touching at the same time on some of his experiences and triumphs of military surgery.

Jean Dominique Larrey was born at Beaudean, in July, 1766. Beaudean was a small town of only about 600 inhabitants in the department of the "Hautes Pyrénés." Larrey's parents were poor, and they were unable to send their son away to school, so they were dependent on the Abbé de Grasset, the village priest, for his early education.

Larrey's father died when he was still of tender years. At the age of thirteen, we find him leaving home for Toulouse, where he had determined to study medicine. At Toulouse lived an uncle, Alexis Larrey, who was a provincial surgeon of some note, attached to the chief hospital of this city. The younger Larrey pursued his studies at the School of Medicine and Surgery of Toulouse, and was, after a time, given residence in the hospital, where he worked under the direction of his uncle Alexis. Here his work was most creditably performed, and he laid a solid foundation of medical knowledge, which was always to stand him in good stead.

At twenty-one years of age, he left Toulouse and journeyed to Paris, the Mecca of all young provincial surgeons. He arrived in August, 1787, and a few days afterwards he tells us that the celebrated Louis announced a "Concours" for the position of auxiliary surgeon of the marine, Department of Brest. Larrey was successful in his examination, and obtained one of the positions, thus enabling him to satisfy his longing for adventure, and a sea voyage. On his way to Brest, he travelled on foot and passed through Laval, the birthplace of Ambroise Paré.

He was soon attached to a frigate, *La Vigilante,* which sailed from Brest for Newfoundland in July, 1787. This expedition was for the purpose of inspecting the French fisheries in these waters, and did not return to France for two years..

Some of the incidents of the voyage and Larrey's observations on the countries visited, with interesting notes on the different animals of Newfoundland, are recorded in the first part of his "Campaigns."

Soon after his return he was called to the Army as surgeon of the first class under General Luckner. In 1794 we find him Surgeon in Chief of the Army of Invasion of Corsica, the 14th Army of the Republic. It was at this time that the friendship between Napoleon and Larrey began, Napoleon commanding the artillery of the same army. This friendship and devotion on the part of Larrey to Napoleon forms one of the most interesting parts of the former's life: and he was the means, as we shall see later, of saving Napoleon from the consequences of what might have been a most regrettable incident in one of his campaigns (Saxony).

Larrey was with the Second Army of Invasion of Corsica, and after this campaign he was ordered to Toulon, where he founded an Anatomical and Surgical School for the instruction of naval surgeons. From Toulon he was called to the Military School of Val-de-Grâce, under the presidency of Coste. Here Larrey had charge of the departments of Anatomy and Operative Surgery, where the greatest care and pains were taken in the instruction of young military surgeons. Larrey tells us that if an operation was undertaken, it was always in the presence of other instructors and students, so that all could profit by the teachings of each case. The operative procedure was outlined, the reasons for operating given, and the after-results predicted. Exact notes were taken at these conferences, with minute observations of each rare disease encountered. Certain anatomic and physiologic experiments on animals were made in conjunction with the cases calling for them, and many autopsies were performed, the results being noted with scrupulous care. Larrey's activities at Val-de-Grâce were during 1796-1797.

In 1798 he accompanied the army to Egypt, where many of his most interesting observations were made. His description of the plague, and its ravages among the native populace and the army is especially vivid. At Jaffa he made many post-mortems on plague subjects, and attended others, almost miraculously escaping the disease itself. In two months' time he lost fourteen surgeons, eleven apothecaries, three physicians, and many nurses of the plague. Among them were some of his best and most cherished assistants.

Larrey estimated that in 1801, fully 150,000 Egyptians died of the disease. Napoleon organized his famous Commission at this time, composed of generals, surgeons, and "Officiers de Santé," which brought into being and kept up the strongest measures for the abatement and stamping out of the scourge.

Mascalet, a surgeon attached to the army under Larrey, giving his example to others, shut himself up in the plague hospitals, and saved a large number of these unfortunates, who would otherwise have died. At last he himself became infected, and died, a martyr to the cause. Even Niel, Larrey tells us, his "élève cheri," who had become infected with plague while assisting him at an autopsy and had recovered, became infected again and lost his life.

Larrey gives this touching tribute to the devoted Mascalet: "At last we had the misfortune to lose in him one of the most devoted friends of humanity, a most zealous colleague, and perhaps the most talented of all. Worthy sharer of my work, receive here with your pupils the tribute of my eternal regrets, and the sincere assurance that your name and memory will live forever in my heart!" It might well be said that these two physicians, Niel and Mascalet, were the Walter Reed and Lazear of their times. Besides the scourge of plague, Larrey had to contend, during his Egyptian campaign, with yellow fever, leprosy, smallpox, syphilis, and ophthalmia. His descriptions of these various diseases as affecting the troops form some of the most interesting parts of his "Mémoires." It is of interest in passing that Larrey regarded leprosy, certainly in some cases, as due to a diet of dried salt fish, as did Sir Jonathan Hutchinson, many years later.

Turning now to the surgical aspects of the Egyptian campaign, we will quote a single case, which certainly parallels in a most striking way the present reports of war wounds of the face and head. That the result achieved by Larrey was a remarkable one for any time, none could refuse to say.

Louis Vouté, corporal in the 88th light infantry brigade at the siege of Alexandria in 1801, received a bullet full in the face (probably a mutilating one, such as the Mamelukes used). The lower jaw was almost entirely carried away, as well as three-quarters of the upper jaw; there was left "une plaie épouvantable." The soft parts were almost completely destroyed as far back as the second molar, and also up to the temporal articulation of the jaw. The nasal bones, as well as the ethmoid, were crushed, and the bony portions of the nasal fossae completely gone, and the zygoma and the right eye injured beyond repair. To add to the unfortunate's condition, the tongue was cut half-way across, and the posterior nares and pharynx were widely open. The jugular vessels were exposed in the neck, by extensive laceration of muscular tissues. Larrey states that he found this unfortunate in one of the hospitals of Alexandria, where his companions had left him, thinking he was dead. The pulse was hardly perceptible, the body cold, and the patient evidently in a state of profound shock. There had been no nourishment given for two days.

Larrey succeeded in getting the poor fellow to take some bouillon through an esophageal tube (he could not speak a word), and after he had somewhat regained his strength, an operation was done. The bruised and lacerated soft parts were excised, after foreign bodies had been removed, and the great wound was scrupulously cleaned. Some vessels were ligated, and the parts allowed to fall in position as much as possible, being maintained in apposition by various points of suture. Nourishment was by the esophageal tube. The wound did well, the patient's strength slowly returned, and gradually the great wound closed, so that it seemed impossible that there had been such loss of tissue. At length the soldier was invalided to France, swallowing and talking fairly well. For years he was to be seen at the Invalides, his facial defect being covered by a silver mask.

Napoleon was deeply grateful for all the care and solicitude of Larrey for the army in Egypt, and decreed to him 200,000 francs. After the battle of Aboukir he received a sword from Napoleon, for having operated on General Fougières, "sur le champ de bataille," and saving his life. On the sword were engraved the words, "Aboukir et Larrey."

In 1802 Larrey returned to France, and shortly after this received the Cross of the Legion of Honor from the Emperor.

In 1805 he was made Inspector General of the Medical Service of all the Armies, and Surgeon-in-Chief of the Imperial Guard. He was with the Guard in almost all the campaigns of Germany, Prussia, and Spain. In all, Larrey took part in twenty-one single and five double campaigns in his long service of fifty-three years with the Army.

During the campaign in Poland in 1806, Larrey made an exhaustive study of the "Plica Polonica," which was presented formally on his return to France. He showed that this trouble, which had existed for years in Poland and was thought to be a symptom and crisis of a general disease called "tricoma," was not an entity, but depended principally on the lack of care of the scalp and hair of the Polish Jews, and yielded quickly to cleanliness and hygiene.

Early in his military career, Larrey made a deep study of the transportation of the wounded, and of remedies for the great delays which had heretofore existed in connection with their prompt transportation from the front lines. He devised his famous "Ambulances Volantes" to meet this difficulty, and they immediately achieved the greatest success. These were strong, though lightly built, ambulances, of two types, for one or two horses, which could travel over very rough country, and accompany the regiments practically to the firing line in many cases. Many times Larrey brought back wounded from the front lines himself at great risk. The grenadiers were full of praise for his new method of transportation, and soon General Beauharnais recommended him highly for this advance in the immediate care of the wounded.

Perhaps the most dramatic of all campaigns through which Larrey passed was that of Russia. The burning of Moscow, the retreat, and passage of the Berezina are among the most thrilling incidents of this campaign. It would be difficult, he says, to imagine a more horrible picture than the burning of Moscow on the 18th and 19th of September, 1812. Dry and fine weather aggravated the conflagration. During this night, of which the tragic incidents will always remain in my memory, the whole city was enveloped. Flames of different colors shot to the heavens covering all points of the horizon, giving off extraordinary light and heat. The sudden explosion of magazines and oil reservoirs added to the horror of the picture, which struck terror to all hearts, citizens and soldiers alike. The soldiers were evacuated to Petrosski, on the route to Petersburg, but I remained with some comrades in a stone house, somewhat isolated, near the Kremlin. The citizens who were left in the city were caught in the conflagration, and rushed wildly about from house to house, giving vent to indescribable cries of horror. Women carried children on their shoulders, taking others by the hand, running to escape death which threatened them from all directions. I saw old men, their long beards aflame, seated on little carts drawn by their relatives, endeavoring to rescue them from this inferno. In eight or ten days this great and superb city was reduced to ashes, with the exception of the Kremlin and a few stone churches."

The stores that Napoleon had counted on finding in Moscow were practically all burned, and the army faced a retreat without definite means of procuring more. The cold grew intense and gradually ambulances, artillery wagons, and accoutrements were all sacrificed in the bivouac fires.

Larrey tells us that the soldier who, exhausted by the cold, came too quickly to the bivouac fire, was almost instantly attacked with gangrene of the extremities, or toppled over dead into the fire. To stumble or fall in the line of march was almost certain death, and the soldiers plodded on, with eyes fixed on the ground: some one in the ranks would stagger and fall; to come to his relief was impossible for his weakened and almost frozen companions. Larrey owed his life and his freedom from gangrene to his walking, and not attempting to ride. For the sick he made a broth of horse meat, flavored with gun powder, for the soldiers largely subsisted on the flesh of horses they found frozen by the wayside, or killed from necessity. Larrey graphically expressed the extremity to which the army was reduced as follows: "Quiconque se couche, s'endort, quiconque s'endort ne se relève pas."

Ravarit gives a most interesting account of the crossing of the Berezina. He tells us that at the time that several regiments of the line, among them the 82nd, celebrated the glorious centenary of the battles of Lutzen and Bautzen, and when Germany is rapidly multiplying her armaments (1913), it is fitting to remember that it is just one hundred years since the newly formed French armies triumphed over those of Russia and Prussia which were numerically three times as strong. We should also remember, he says, as pointed out by Drs. Triaire and Bonnette, the greatness and nobility of character of an army surgeon during that glorious but sterile campaign of Saxony.

The 27th of November, 1812, Baron Larrey, First Surgeon of the Guard, figured in the tragic episode of the passage of the Berezina, when he barely escaped with his life. His popularity with the soldiers and the profound affection which he inspired in them, were undoubtedly the means of saving it.

"Do not worry, Monsieur Le Baron," said one of the grenadiers, the evening of the disastrous passage. "Fear nothing, we are with you, and the Emperor is with us; he will get us out of this."

During the noise of the desperate battle which the Duke de Bellune waged with a few battered and half-frozen regiments against the 120,000 Russians under Wittgenstein, a single man was recognized, cheered, supported from hand to hand to the other side of the stream, which numbers of generals were unable to reach, at the moment when the bridge disappeared in the icy waters of the Berezina. This man was Larrey.

Shortly after the battle of Bautzen, Ravarit tells us, reports were brought to Napoleon that many of the conscripts were wounded in the hands, and there was grave suspicion that these injuries were self-inflicted. Forgetting the unquestionable heroism of these new troops under fire, and dominated by first impulses, as often was the case, Napoleon came to the definite conclusion that the wounds were not inflicted by the enemy, and ordered that one in twenty of the conscripts should be shot.

Not a voice was raised against this drastic and unjust action, and, indeed, certain officers tried their best to excite Napoleon further regarding the matter. To Larrey alone belongs the great honor of having saved Napoleon from this act of injustice. Larry wished to undertake an immediate and searching medical investigation of the charges against the conscripts, but met with continued obstacles, and only his persistence led to Napoleon's granting him an interview to discuss the subject. The interview took place at the Marcolini palace, and after a time Napoleon agreed to the project, saying, "Go, Monsieur Larry, and do your duty." Larry promptly undertook the investigation, in the midst of his other pressing duties.

He examined with scrupulous care 2,672 soldiers accused of self-mutilation, and in a report which Ravarit says was worthy of the greatest expert in legal medicine of the present day, he proved that the wounds of these men were not intentionally inflicted, and that almost all were using muskets for the first time, and this fact was responsible for their wounds. Only the young recruits had these wounds, and at the same time they had sabre wounds, proved to have been received at the time of the furious onslaught of the Prussian and Russian cavalry.

After his investigation, Larrey was again admitted to the presence of the Emperor, who said, "Well, Monsieur Larrey, do you still persist in your opinion?" I do more, Sire," said Larrey, "I bring you proof that these brave young troops have been outrageously calumniated. There is not a wound but has been scrupulously examined." As a soldier who had participated in all the exigencies of the battle of Lutzen, and as a physician Larrey warmly pleaded the cause of the heroic conscripts.

Rapidly and impatiently the Emperor read the report. In a few minutes his expression became calm and benevolent, and rising, he warmly wrung the hands of his Surgeon of the Guard. "Go, Monsieur Larrey," he said. "A sovereign should be happy to have in his service a man like you. My orders will be sent you."

In a few hours' time, Larrey received the portrait of the victor of Austerlitz, encircled in diamonds, and a pension on the State, another favor added to that glorious one granted the night of Wagram, when the Emperor had made him a Baron and a Commander of the Legion of Honor.

Of the many articles by Larrey on surgical subjects, none is more interesting than his "Notice sur l'Aneurisme," incorporated in his volume of "Campaigns" (Austerlitz, Vol. ii, p. 348). That his ideas on the etiology of internal aneurysms were far in advance of his contemporaries is clear.

After the campaign of Austerlitz, Larrey returned to Paris and began work on classification of his notes and records of those patients afflicted with aneurysm. After mentioning the work of Scarpa and Morgagni and others on this subject, he tells us that his own theories as to the etiology of aneurysms are at variance with the generally accepted view, and that he could not accept the traumatic etiology of these internal aneurysms. He argued that when men were sober and led good lives, they were not afflicted with aneurysm, no matter how violent their efforts.

He tells us that if it were possible to go back and trace the primary cause of these blood-vessel dilatations, we would be convinced that this cause is due to a particular virus which localizes in different parts of the living tissues according to the affinity for it. The virus of syphilis, which circulates through the tissues of the body, and which is kept nourished in its course, nevertheless may give no outward manifestations of its presence, but encountering a tissue to its liking, remains fixed there. Symptoms of venereal disease preceded internal aneurysms in the patients that he observed dying of this trouble, and these observations, he says, strengthened his theory as to the cause of aneurysm. He urged that antispecific remedies must be used early in these conditions, as this may prevent aneurysms from occurring.

If we substitute spirochaeta pallida for Larrey's "syphilitic virus," the above statements would make an excellent modern dissertation on "New Facts Concerning Syphilis of the Internal Organs."

Among the very interesting and sound principles of surgery for the times was Larrey's dictum that in some crushing gunshot injuries of the extremities, immediate amputation gave the only hope. He performed these operations with astonishing celerity,—three minutes being the actual time taken for most amputations. His method of procedure in amputations at the shoulder- and hip-joints are known to all present-day surgeons. Most striking was the immediate improvement of these unfortunate wounded after the amputation. The pain, shock, and restlessness were relieved as if by magic, and often the soldiers sank down in the snow and slept peacefully, as soon as their dressing was completed.

In the campaign of 1809, at Lobau on the Danube, Larrey was called to the Duke de Montebello (Marshal Lannes), who had a grave gunshot wound of the knee that required amputation. Lannes was one of the warmest friends that Larrey had, having been all through Egypt with him, and he states that never had he been in a harder and more trying position. Unfortunately, Larrey's fears for the outcome of the case were realized, and the Duke succumbed some days later, undoubtedly of sepsis.

Great stress was laid by Larrey on evacuating the wounded from the crowded hospitals as soon as possible. Many were saved in this way from the hospitals at Eylau in the campaign in Poland. Some of them were so weak they could not move or lift a finger. Larrey put many of them, himself, into ambulances. Some surgeons regarded this evacuation as an act of barbarism, as it seemed as if many of the sick could not live twenty-four hours; but Larrey tells us he quoted the saying of the Prince of Medicine, "Ad morbos extremos, extrema remedia." Infinite care was taken in the transportation and skillful help in plenty was at hand to accompany the ambulances, which were preceded by couriers, to make preparations for them. To the surprise of many, the wounded arrived at their destinations afebrile; their wounds in much better condition; a very few only having succumbed. This Larrey attributes to the fresh air, change, and freedom from the hospital atmosphere, loaded with infection.

Some interesting statistics of the wounded are given by Larrey. Of 22,000 wounded in different battles of various army corps, 14,084 in the hospitals between the Oder and the Rhine were examined by the Sanitary Commission; 6,703 of these, cured of their wounds, entered their respective corps for active service; 4,027 somewhat incapacitated were employed on the artillery trains, or in the ambulance divisions; 3,354 absolutely unfit for any work were evacuated to France, with the exception of a few whose wounds were not advanced in healing enough to permit of this. Of these, 3,354 completely incapacitated, 731 suffered the amputation of one or more limbs.

Of the 7,916 left to consider (from the 22,000), more than 3,000 were completely cured of their wounds and back in their regiments, 2,500 were relatively incapacitated and passed to the Rhine towns or to France.

About 2,400 in all died of wounds, among them 972 who had suffered various amputations. Surely these statistics form a wonderful record for the times, and speak volumes for the work of Larrey and his staff.

On the return of Napoleon from Elba in 1815, Larrey was one of the first to welcome him. On presenting the flag of the Department of the "Hautes-Pyrénées" at the presentation of flags of Departments, Napoleon is said to have spoken thus: "Gentlemen, it affords me unfeigned pleasure to present to you this Color, through your compatriot, Larrey, who honors humanity by his disinterestedness and courage. We are indebted to him for saving a large number of our soldiers, in the deserts bordering on Libya, by giving them fully of the little pure water and spirits which had been preserved for his own use, and of which he himself stood in the greatest need."

Larrey was never far from Napoleon from this time until the separation at Waterloo. Here he was always at his post, operating on the battlefield through storms of rain. During the retreat he and his staff were taken prisoners by a corps of Prussian Lancers, Larrey's horse being wounded at the same time that he was wounded in the head. He was left on the field for dead, but recovered consciousness after a time, remounted his wounded horse, and resumed the retreat, when he was again surrounded by Prussians. Notwithstanding his prompt surrender, he was disarmed and stripped of nearly all his clothes, the Prussian officers dividing the contents of his purse, and taking possession of his arms, ring and watch. The grey army coat he wore and a certain resemblance in figure led the Prussian officers to mistake him for Napoleon, and he was sentenced to be shot, when providentially he was recognized by the Sugeon General of the regiment, who took Larrey before Bülow, who recognized him, and ordered him taken before Blücher. By a strange coincidence, Larrey had saved the life of Blücher's son in one of the Austrian battles. Blücher ordered his release from confinement, and Larrey was sent to Louvain, where he was at first wretchedly housed, but again being recognized by a young medical officer who had been sent to dress his wounds, he was removed to the house of Monsieur Yonk, an influential citizen of the town.

After his wounds were healed, Larrey returned to Paris, where he found the new order of things in full swing, and he was coldly received. Almost all his pensions and positions were taken from him, and his wife was obliged to give painting lessons to help along the ménage. The only office which he was permitted to retain was that of surgeon to the Hôpital de la Garde.

From 1815 to 1818 he was in very straitened circumstances, if not in actual want. Larrey, however, kept up his indomitable courage, and gradually the skies began to clear, and some of his appointments and emoluments were returned to him. He thought at one time of seeking new fortune in America, and also was offered the full charge of the Medical Staff of the Brazilian Army. He was engaged in writing all his numerous and wonderful experiences in his different campaigns at this time, especially the campaigns of Russia, Saxony, and France.

In 1834, Larrey set out on a tour of the south of France, which was extended to Italy. He was able to visit Beaudean again, his native place, and what was his wonder and joy to find his old friend and tutor, the Abbé de Grasset, still alive, though more than ninety years of age!

Through almost every village which he passed, he met old companions in arms, the remnants of the "Old Guard," so many of whom he had treated, and many of whose lives he had saved. When these veterans, many of them cripples, heard that he was coming, they travelled miles to see him, and followed his carriage on foot for some time.

In 1842, Larrey made a trip to Africa, as Official Inspector of the Hospitals of Algeria, where he saw many of the old battlefields he knew so well. He was accompanied in this mission by his son, Hippolyte Larrey.

On his return he was stricken with pneumonia at Lyons, and died in that city on July 25, 1842. By a singular coincidence, Madame Larrey died in Paris on the same day. He was buried in the cemetery of Père la Chaise, where so many illustrious French medical men were laid at rest.

Thus ended the life of the greatest of military surgeons. For fifty-three years he had given the best of his life to France and her army, in a long record of achievement that has never been surpassed, and has added its share to the glory of that incomparable country.

Bibliography.

Larrey: Mémoires et Campagnes Militaires. Paris, 1812.
Tattet: Journal d'un Chirurgien de la Grande Armée, 1803-1815. Paris, 1913.
Stewart: Surgeons and Hospitals of Paris. Buffalo, 1841.
Ravarit: L'énergie du Baron Larrey (*Aesculape,* August, 1913).

THE TECHNIQUE OF CITRATED BLOOD TRANSFUSION.

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The transfusion of citrated blood now seems to have taken a very definite place in the surgical world. Its advantages over other methods are numerous, its therapeutic results are identical and when carried out with careful, painstaking technique it is safe, accurate, and sure. Thousands of these transfusions were carried out in the A. E. F. with remarkably good results.

In performing citrated blood transfusions several points must be carried in mind.

a. The recipient must be carefully typed.

b. The donor must be carefully typed and if time permits a Wassermann reaction done.

c. Only donors of the same or higher types than the recipient shall be used.

d. Blood is a fragile tissue, the processes of coagulation begin almost instantly when the blood leaves the vein, therefore the blood must pass quickly, easily and cleanly into the sodium citrate solution and be immediately mixed with it before coagulation begins.

e. Having obtained the blood and having carefully mixed it with sodium citrate, the process of administering it to the recipient may be carried out much more leisurely than in other methods, the problem of coagulation having been eliminated.

Altho citrated blood will keep for two days, it is always well to complete the transfer as quickly as possible and in my transfusions never have more than thirty minutes elapsed between the time of taking of the blood and its introduction into the vein of the recipient.

The steps here enumerated are those followed by the author in Base Hospital No. 6 (Massachusetts General Hospital) in France.

TYPING (MACROSCOPIC METHOD).

On a clean glass slide place three drops each of Type No. II and Type No. III serum. This serum is human blood serum from known types, the serum having been separated from the blood and citrated.

Prick the ear lobe of the recipient and from it take a drop of blood on the point of a clean knife and mix with No. II serum on the glass slide.

Carefully wash the knife and take a second drop and mix with No. III serum on the glass slide. Gently rotate the slide forward and backward in order that the blood and serum may be thoroughly mixed. Soon, five to ten minutes, changes will begin to take place in the appearance of the little pools. The blood may agglutinate in one or in the other and form in small clumps, having somewhat the appearance of the top of a saltcellar.

If agglutination occurs in both No. II and No. III serum then the recipient is necessarily Type No. I.

If agglutination occurs in No. III but not in No II, the recipient is Type No. II.

If agglutination occurs in No. II but not in No. III, the recipient is Type No. III.

If there is no agglutination, the recipient is Type No. IV.

Having determined the type number of the recipient the process is repeated on the prospective donors and their type numbers found. A safe rule to follow is that a recipient may receive blood from his own type or from any type higher.

A Type No. I may receive blood from Types I, II, III, and IV.

A Type No. II may receive blood from Types II, III, and IV.

A Type No. III may receive blood from Types III and IV.

A Type No. IV may receive blood from only Type IV.

Type No. IV is a universal donor. Type No. I is a universal recipient.

If known type sera—II and III are not available, the following method may be used:

Draw the blood from the recipient as for a Wassermann reaction. Allow to clot and the serum to separate. Pipette off the serum and centrifuge until clear. Add normal sodium citrate solution (3.8%) in the proportion of one part to ten parts serum.

Use this as a type serum. Mix it with blood from donors as before, rejecting those that agglutinate.

In army hospitals it proved convenient as well as expedient that certain healthy soldiers be typed and Wassermann reactions done, so that when a donor was required, a candidate of the type desired was immediately available.

DRAWING OF BLOOD.

Apparatus.

A large graduated flask similar to a Vincent tube but of a capacity of 1,000 c.cm..

A short rubber tube or catheter about two inches in length.

A sharp, clean, large needle, 14 to 16 gauge.

A long glass stirring rod.

The needle must be kept absolutely clean, razor sharp, and the rubber connecting tube clean and smooth.

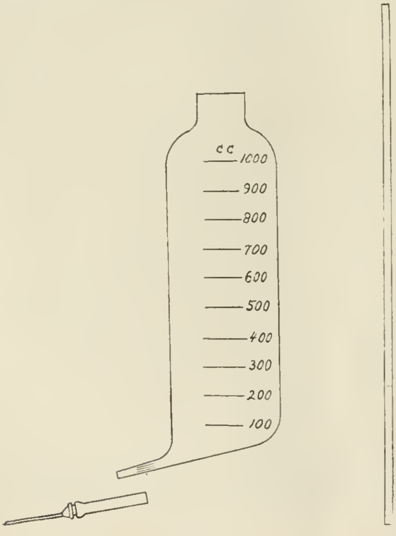

PLATE I.

Procedure.

Place the donor's arm extended on the table. Scrub the area over the median bacillic vein with soap and water followed by alcohol. Apply a light rubber tourniquet to the upper arm, sufficiently tight to dilate the veins. (Take the pulse at the wrist to be sure that the tourniquet is not too tight.) Select a large vein and inject a few drops of novocaine over the site of puncture. A small ¼-inch transverse incision may be made in the skin over the vein to facilitate entrance.

Assemble the apparatus and pour into the flask 50 c. cm. of freshly made sterile isotonic sodium citrate solution (3.8%).

Pinch the rubber connecting tube to prevent the escape of the solution. Allow a few drops to run out of the needle to moisten it.

Point the needle toward the hand and introduce it under the skin and into the vein. While the blood flows into the flask, hold the needle immobile in the vein with one hand and with the other hand, hold the flask upright. The assistant gently stirs the citrate solution into the blood with the long glass stirring rod. If this is not done the citrate solution will float up on top of the blood and not mix properly. Instruct the donor to open and shut the fist. The column of blood will rise rapidly in the flask until the desired amount is drawn, four to six minutes being the ordinary time required.

The flask is so constructed that in the event that the donor possesses small veins or is exceedingly fat or if the surgeon is not certain in vein puncture, the vein may be exposed under novocaine for a distance of about an inch, ligated above, a small opening made in the vein and the tip of the flask introduced without needle or rubber connection. In this case the tip is first washed out with a little citrate solution and the remainder of the citrate solution is poured in as the first drop enters the flask.

With 50 c. cm. of citrate solution and with careful mixing, as much as 500 c. cm. of blood may be drawn. (That is 550 c. cm. of total solution.)

If more blood is required add relatively greater amount of sodium citrate solution.

The desired amount of blood having been drawn, pinch the rubber connecting tube, remove the tourniquet and withdraw the needle.

Close the flask with a rubber stopper, and hold it in a horizontal position.

Disconnect the needle and rubber tube and have them washed immediately in cold water.

Take the flask of blood to the recipient and reverse the process.

INTRODUCTION OF BLOOD.

Apparatus.

The same flask filled with blood and stoppered with rubber stopper. Connecting tube three feet long with glass window near distal end and metal needle connection on the end. Needle much smaller than in other apparatus or small cannula. (19 or 20 gauge.)

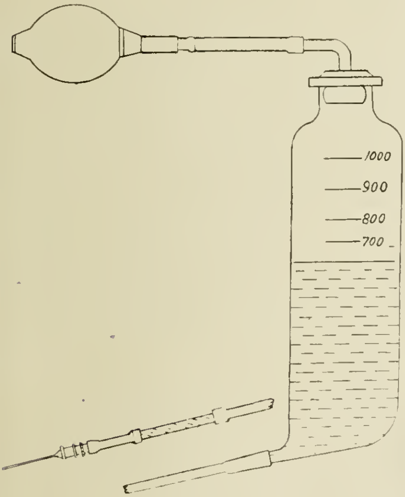

Plate II.

Procedure.

Apply a light tourniquet to the upper arm. Prepare the arm and expose the vein under novocaine as before.

Assemble the apparatus. Fill the connecting tube with blood by tipping the flask. Introduce the needle or cannula into the vein directing the flow upward. Remove the tourniquet. Elevate the flask, release the flow and allow the blood to pass into the vein by gravity. The process being identical with the introduction of salt solution or salvasan. The rate of flow should not be faster than 50 c. cm. per minute.

If the rate is too slow it may be hastened by applying air pressure above with a cautery bulb.

After the blood has been injected, withdraw the needle or cannula and the transfusion is ended.

It is a good practice to stop the flow for a minute after the first 30 c. cm. have been injected to note possible symptoms of hemolysis. These symptoms may be summarized as follows: (a) Shortness of breath; (b) intense flushing of the face, sometimes with urticaria; (c) pain in abdomen or back; (d) vomiting. In my clinic in France no hemolytic reactions were encountered. Slight chills occurred in a small percentage of the cases in from 15 minutes to three hours after the transfer was completed but they were of no serious import.

Batteli and Stein have shown that 60 to 70 per cent. of the sodium citrate disappears from the body in 20 seconds and that 10 to 20 per cent. of the remainder disappears during the next five to ten minutes.

ADVANTAGES OF THE CITRATE METHOD.

a. The whole apparatus may be sterilized by boiling and may be used repeatedly. I have performed four transfers of blood in one afternoon with a single apparatus. Following each transfer the apparatus was washed in cold water and reboiled. No further preparation is required.

b. In drawing the blood if there is clotting in the needle a new one may be substituted without losing or harming the blood already drawn.

c. Citrated blood will keep several hours if necessary.

d. The blood may be drawn in the operating room, carried to the ward in the flask and there introduced into the patient.

e. The therapeutic results as compared with other methods of transfusion are identical.

f. The whole operation may be done easily, surely, and without haste.

g. The blood may be administered through a very small needle without incision, which is of value in hemorrhagic patients who often bleed from the wound.

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SILENT GASTRIC CANCER WITH GENERAL ANASARCA.

In *La Presse Médicale* for June, 1919, there was published an interesting article on an unusual subject by Gouget, the exact title being. "L'évolution du Cancer de l'Estomac à Forme d'Anasarque."

Gouget says that though Chesnel first brought out the fact of latent stomach cancer with generalized anasarca, comparatively little has been written on the subject, and many of the cases remain undiagnosed until in the last stages of the disease, or on the autopsy table. The patients at first give the impression of those afflicted with a chronic nephritis or a chronic cardiac insufficiency. A careful examination rules out these conditions and the dropsy remains to be accounted for. The cases are sometimes confused with pernicious anemia, but again the blood picture rules this condition out. The anasarca in these cases is so generalized that the group of cases stands alone, and cannot be confused with those cases of gastric cancer having oedema of different parts from the pressure of secondary cancerous masses.

Gouget has found 12 cases reported in the literature which fulfill the requirements as to symptoms, and adds one of his own. The cases are very apt to be treated for cardiac incompetency, as the possibility of nephritis can more definitely be ruled out, with special tests and examinations.

The cases group themselves roughly into three different classes. The first comprise those hospital patients who enter the wards in an extremely feeble condition with generalized oedema, but no gastric symptoms whatever, and without albuminuria. Death occurs in a short time, and at autopsy extensive gastric cancer is found. The second group comprises those cases with rapid and definitely known time of the development of generalized anasarca and without symptoms on the part of the stomach till nearly the end of the illness. The dropsy may occur quite suddenly, the patient being in previously good health and in less than three months the patient succumbs to gastric cancer. The third class of cases comprises those with a definite long stage of oedema, sometimes up to a year in duration, with marked fluctuations in the amount of the swelling, and sometimes its disappearance for a time, only to return and be persistent. In these cases as in the others the heart and kidneys are not definitely diseased.

Gouget's personal case was that of a woman of 52 years who had always enjoyed good health until a year before, when she began to notice swelling of the legs. After a time the oedema improved, but returned. There were absolutely no gastric symptoms present, and the urine was negative. At first the case was treated as one of cardiac dropsy, and digitalis and diuretics were used with improvement of the condition so that the patient was able to leave the hospital and resume her work. The symptoms returned, however, with ascites, and the patient returned to the hospital for treatment. At this time treatment as for cardiac insufficiency had no effect whatever. Gouget tells us that the anemia was not pronounced in this case. The patient failed and died. At autopsy the heart, lungs, liver, and spleen were found normal, the stomach showed a large cancer on the posterior wall. In other cases that Gouget mentions the cancer was situated anteriorly, or had a central situation.

This interesting group of cases teaches the lesson that in generalized oedema of obscure etiology, gastric cancer should be one of the first things thought of, and in all such cases radiography of the stomach should be done, though there are no clinical symptoms pointing to the involvement of this organ.

W. P. C.

THE UNTILLED FIELDS OF PUBLIC HEALTH.

The increasing importance of public health administration to the welfare of mankind and the breadth of its applicability to human problems give promise of almost unlimited activity in this field in years to come. As one of the chief handicaps in the development of the work of the Public Health Service is the lack of well trained personnel, a survey of its chief departments has been made by Dr. C.-E. A. Winslow of the Yale School of Medicine, in his recent address, "The Untilled Fields of Public Health," in order to make known to the profession and also to the student who is endeavoring to decide upon a career the possibilities presented by this field of medical service. Dr. Winslow has outlined the development of the service and emphasizes the importance of five main aspects: (1) the promotion of physical health and efficiency through organized community efforts for the sanitation of the environment; (2) the control of community infections; (3) the education of the individual in principles of personal hygiene; (4) the organization of medical and nursing service for the early diagnosis and preventive treatment of disease, and (5) the organization of social conditions in such a way that each individual may be ensured a standard of living adequate for the maintenance of health.

The first stage in the development of public health service was the attempt to maintain sanitary and healthful environmental conditions. This movement was originated three-quarters of a century ago in London by Sir John Simon; through his efforts were removed the unsanitary accumulations which had kept alive the pestilences of the Middle Ages. In more recent years, the problem of environmental sanitation has been solved by General Gorgas in the building of the Panama Canal. There is still a great deal to do in this earliest phase of public health work; we need vigorous, systematic, and organized effort to control typhus fever, bubonic plague, and malaria. In this field, the elimination of various diseases in their endemic homes promises to be one of the notable achievements of the future.

From the problems involved in environmental sanitation, health officials have worked into other fields. As water-borne and insect-borne diseases began to be controlled effectively, the question of dealing with maladies spreading by direct contact from one individual to another became a subject of absorbing interest and study. Measles, pneumonia, and influenza have become relatively more important as medical science has gained control over typhoid, cholera, and plague. In the control of community infections the bacteriologist, rather than the sanitary engineer, becomes the leader. The control of these diseases, by the detection of incipient cases and of well carriers, isolation, and bedside infection,—was the chief concern of the public health movement fifteen years ago. We now have another weapon to employ against microbes—the prophylactic or therapeutic use of vaccines and immune sera. By this means, smallpox and typhoid fever have come under control, and only the failure to recognize diphtheria promptly prevents us from controlling that disease equally well with antitoxic serum. Our recent experience with influenza indicates that there is still much to be done in the field of community infections.

A third aspect of the public health program upon which depends the saving of a large number of lives involves the element of personal hygiene and a wide educational campaign. The problem of infant mortality can be solved most satisfactorily by the education of the mother in infant care, feeding, clothing, airing, and bathing. The control of tuberculosis requires more than the provision of a sanitary working environment and control of the consumptive who carelessly spreads the disease; as in the case of infant mortality, our main weapon is personal hygiene, by which the consumptive learns so to conduct his daily life that his own tissues will have the strongest possible resistance to the invading micro-organisms. The teacher of personal hygiene thus becomes a necessary figure in the public health campaign.

In order to make preventive measures effective, it is necessary to reach a larger number of people than ordinarily would be cared for by private practitioners. In this work, the medical school inspector, the school nurse, and the school clinics benefit large numbers of children; for adults there is similar provision in various clinics, such as those for tuberculosis and venereal disease. The organization of medical and nursing service for the early diagnosis and preventive treatment of disease can be brought about by the effective coördination within the profession itself of clinical and laboratory facilities to provide the type of expert service which is furnished by our best hospitals and which no individual private practitioner can supply. This care must be made available not merely for the very poor and very rich, but for the entire community. The best plans for securing these ends must be worked out by the public health worker of the future.

A further field for investigation and reform which can be entered upon by the public health worker for the benefit of a large number of people of this country is the adjustment of social conditions in such a way that a certain standard of living may be possible to all. It is only recently that the evil effects of low social and economic levels have been appreciated sufficiently to arouse active remedial effort. General Gorgas, in order to aid in increasing the general vital resistance of pneumonia among the employees on the Isthmus, considered the raising of wages as one of the most effective weapons. Among the poorer classes, the infant mortality rate is higher and tuberculosis is more prevalent than among those who are able to enjoy a higher standard of living. One of the most important of our post-war reconstruction problems is the adjustment of social machinery so that the normal standard of physical health will not be impaired by poverty.

The foregoing survey of the problems to be met by the Public Health Service indicates the possible expansion of public health activities. In order to make possible this future development, there will be needed many different experts of fundamentally distinct training to contribute their special resources to the common task. Dr. Winslow believes that in addition to minor specialists, there must be at least seven types of highly qualified persons in this field: the physician, the nurse, the bacteriologist, the epidemiologist, the engineer, the statistician, and the social worker. To these public health workers of the future will be entrusted the health and welfare of hundreds of thousands of lives in this country every year.

MEDICAL NOTES.

Royal Institute of Public Health in London.—The Royal Institute of Public Health in London, which suspended meetings during the war, will hold its next annual congress at Brussels from May 20 to 24, inclusive, by invitation of the Burgomaster, M. Adolphe Max. Delegates will be invited from all the universities, municipalities, and other public bodies.

Officers of the Division of Sanitation in the Bureau of Hygiene and Public Health.—Professor George C. Whipple, of Harvard University, has been appointed director of the division of sanitation in the Bureau of Hygiene and Public Health of the League of Red Cross Societies, and has been granted a leave of absence from Harvard University for the second half year in order that he may go to Geneva in February, returning to Cambridge in September, 1920. This organization will offer exceptional opportunities for sanitary engineers. The Red Cross has been engaged hitherto chiefly in relief work, and will now add to this the work of preventing disease by improving sanitary conditions. Professor Whipple is a member of the engineering firm of Hazen, Whipple, and Fuller, New York City. Another member of this firm, Colonel Francis F. Longley, associate director of the division, has left for Geneva in order to undertake emergency work in the Balkans if typhus fever becomes prevalent there.

Work of Dr. Noguchi.—Dr. Hideyo Noguchi, of the Rockefeller Institute for Medical Research, has gone to Merida in order to carry on confirmatory studies of his discovery of *L. icteroides* and to experiment on a larger scale with the curative properties of a specific serum which he has prepared.

Appointment of Dr. Cruickshank.—At the University of Aberdeen, Dr. John Cruickshank has been appointed Georgina M'Robert lecturer in pathology. Dr. Cruickshank has been serving as pathologist to the Crichton Royal Institution.

School of Public Hygiene.—There has been established as a separate department of the University of Pennsylvania a school of public hygiene. This department has been under the supervision of the medical school, and was the first school of public hygiene in America. It will be under the direction of Dr. Alexander C. Abbott.

BOSTON AND MASSACHUSETTS.

Week's Death Rate in Boston.—During the week ending Jan. 17, 1920, the number of deaths reported was 213 against 395 last year, with a rate of 13.75 against 25.86 last year. There were 34 deaths under one year of age against 47 last year.

The number of cases of principal reportable diseases were: Diphtheria, 51; scarlet fever, 87; measles, 266; whooping cough, 63; tuberculosis, 43.

Included in the above were the following cases of non-residents: Diphtheria, 10; scarlet fever 7; measles, 1; whooping cough, 1; tuberculosis, 8.

Total deaths from these diseases were: Diphtheria, 3; scarlet fever, 3; measles, 2; whooping cough, 2; tuberculosis, 11.

Influenza cases, 23.

East Boston Medical Society.—At the fifth annual meeting of the East Boston Medical Society, the following officers were elected for the year 1920: President, J. Danforth Taylor, M.D.; Secretary, Richard H. Houghton, M.D.; Treasurer, A. L. McLaren, M.D.; Vice-President, S. Willard Coy, M. D.; Executive Committee, Robert Bonney, M.D.

Osler Memorial Meeting.—A meeting in memory of Dr. William Osler was held at the Peter Bent Brigham Hospital on January 20. The speakers were Dr. W. T. Councilman, Dr. Harvey Cushing, Dr. J. H. Pratt, and Dr. E. C. Streeter.

Appointment of Dr. Richard C. Cabot.—Announcement has been made of the appointment of Dr. Richard C. Cabot of Boston to the professorship of social ethics at Harvard University. Dr. Cabot will continue to serve as professor of clinical medicine at the Harvard Medical School and as chief of the west medical service of the Massachusetts General Hospital.

Dr. Cabot was a member of the class of 1889 at Harvard and of 1892 at the Medical School. From 1895 to 1898 he was visiting physician in Channing House, and in 1898 he began his service with the Massachusetts General Hospital. He has been associated with the Harvard Medical School for more than twenty years; from 1889 to 1903 he was an assistant in medicine; from that time to 1908 an instructor, then assistant professor until 1918, when he became a full professor of clinical medicine. Dr. Cabot is the author of many medical books, including volumes on the clinical examination of the blood, the serum diagnosis of disease, and physical diagnosis and differential diagnosis.

During the war, Dr. Cabot served as major in the Medical Corps at Base Hospital No. 6, the Massachusetts General Hospital Unit situated at Bordeaux. He remained there from July, 1917, until February, 1919, except for a period of five months in the latter part of 1917 and the early part of 1918, when he was detached for service with the Red Cross in Paris. In October, 1918, he was promoted to the rank of lieutenant colonel.

NEW ENGLAND NOTES.

New England War Relief Funds.—Two of the principal New England War Relief Funds have received contributions amounting to the following sums:

French Orphanage Fund ..	$548,778.23
Italian Fund	319,506.13

New England Alumni Society of the University of Pennsylvania.—The annual meeting and dinner of the New England Alumni Society of the University of Pennsylvania was held at the clubhouse of the Boston Athletic Association on Saturday evening, January 17, at seven o'clock.

The speakers on that occasion were Dean William Pepper of the School of Medicine of the University of Pennsylvania; Hugh W. Ogden, lately Judge-Advocate of the Rainbow Division, American Expeditionary Forces; Dean Charles F. Painter of the Tufts College School of Medicine; Dr. Joseph H. Pratt, the prominent internist of Boston, and others.

This was the first meeting of the Society since the World War.

The Massachusetts Medical Society.

THE BOSTON MEDICAL LIBRARY.

Resolutions on the Death of Sir William Osler Passed at the Annual Meeting of The Boston Medical Library, January 13, 1920.

Whereas, in the death of Sir William Osler this Library has suffered the loss of a great friend, who, throughout his career did most generously support and further its development, giving timely encouragement to its founders, inspiring its promoters in the succeeding forty-three years by every means in his power, by treasured advice to its committees, by many treasured gifts for its shelves, by not infrequent visits, more notably, at the dedication of our present building and on the well-remembered occasion of his address on Thomas Linacre; and

Whereas William Osler was the first, and last surviving honorary member on the roll of our Library, in conferring of which distinction in 1911 this Corporation will never cease to take pride;

Be it therefore Resolved, that the officers and Members of the Boston Medical Library record their profound grief and sorrow over the loss of this beloved physician, their friend, one of the rarest, loveliest and best spirits that rolling Time ever pressed from his vintage; exemplar of all that is highest in our humanity, whose sovereign mind, resilient to the last, fertilized Letters and the Sciences through half a century.

Sent to The Boston Medical and Surgical Journal for publication, by vote of the Corporation. W. L. Burrage, *Secretary*.

SOCIETY NOTICES.

New England Roentgen Ray Society.—The first regular meeting of the reorganized body, now known as the New England Roentgen Ray Society, will be held at the Medical Library, Friday evening, February 13 at 7.30 o'clock.

Dr. Isaac Gerber of Providence will talk on "Some Roentgen Observations on the Mastoid."

The officers of the new society are: Dr. Ralph D. Leonard, President; Dr. John H. Lindsey, Vice-President; Dr. Frederick W. O'Brien, Secretary-Treasurer. The Executive Committee comprises Dr. George W. Holmes, Dr. John H. Lambert, and Dr. L. B. Morrison. Frederick W. O'Brien, *Secretary*.

Wachusett Medical Improvement Society.—A course in early diagnosis of pulmonary tuberculosis and methods of treatment will be given under the auspices of the society, at the Rutland State Sanatorium, through the coöperation of the medical staff of that institution and of specialists in tuberculosis, practicing in Rutland, at 3.30 p.m. as follows:

January 22. History Taking and Physical Diagnosis. Dr. George N. Lapham.

January 29. Classification of Cases. Demonstration of methods of Physical Diagnosis. Sanatorium Staff.

February 5. General Treatment. Sanatorium Staff.

February 12. Treatment of Hemorrhage and Pneumothorax. Sanatorium Staff.

February 19. Occupational Therapy. Dr. Bayard T. Crane.

February 26. X-ray, Tuberculin, and other Tests, Laboratory Methods and Simple Technique of Sputum Examination. Sanatorium Staff.

The members of the State Sanatorium Staff who will take part in the teaching are: Dr. Ernest B. Emerson, superintendent; Dr. Leon A. Alley, assistant superintendent; Dr. David E. Mann, Dr. Halbert C. Hubbard, Dr. William B. Davidson, and Dr. Mary E. Gaffney.

The object in presenting this course is to promote early diagnosis and control of pulmonary cases, and it will be open to all physicians of both sexes. The facilities at Rutland are ample for illustrating any phase of the subject. Should weather conditions make it desirable to postpone any of the exercises, this will be done.

There will be no charge for tuition.

For enrollment or further information address

Dr. Ransom A. Race, *Secretary*,
Paxton, Mass.

It is the intention of the Division of Tuberculosis, of the Massachusetts Department of Public Health, to extend the expert service in the State Sanatoria, both in the way of consultation clinics, and also in the manner represented by this notice.

East Boston Medical Society.—At a recent meeting at Young's Hotel, the East Boston Medical Society elected the following officers for 1920: President, J. Danforth Taylor, M.D.; vice-president, S. Willard Coy, M.D.; treasurer, A. L. McLaren, M.D.; secretary, Richard Houghton, M.D.

The next meeting will be held at Wolcott Hall, East Boston, Feb. 10, 1920, at 8.15 p.m. Charles L. Scudder, M.D., is the speaker. Certain Problems in the Surgery of the Diseases of the Stomach is the topic. Richard Houghton, M.D., *Secretary*.

Suffolk District Medical Society, Surgical Section.—The next meeting of the Surgical Section, Suffolk District Medical Society, will be held on February 18, 1920, at 8.15 p.m., at the Boston Medical Library. Dr. John A. Hartwell, Clinical Professor of Surgery, Cornell University Medical College, and Director of Surgery, Bellevue Hospital, will present a paper. Subject, "Abscess of the Lung." A discussion will follow the reading of the paper. It is hoped that all those present will participate.

Richard H. Miller, *Secretary*.

The New England Dermatological Society.—The New England Dermatological Society will hold its quarterly meeting at the Massachusetts General Hospital, Out-Patient Building, on Wednesday, February 11, 1920, at 3.30 p.m.

Members of the medical profession are invited to attend. E. Lawrence Oliver, *Secretary*.

NOTICE.

Massachusetts General Hospital.—A meeting of the Out-Patient Medical Staff will be held in the Lower Out-Patient Department Amphitheatre on February 11, at 12, noon.

Program is as follows:—

1. Observations on Various Types of Diabetes. Dr. F. Gorham Brigham.
2. Pyelitis. Dr. E. G. Crabtree.
3. Some Out-Patient Hands. Dr. Torr W. Harmer.

F. A. Washburn, *Resident Physician*.

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Address.

THE PRESENT NEEDS OF THE TUBERCULOSIS CAMPAIGN.*

By John B. Hawes, 2d, M.D., Boston.

We are going through an age of reconstruction. Our problem is not confined, however, to the reconstruction of maimed and sick men, but involves as well the reconstruction of our ideas and our theories. The war has taught us many things, not only about war itself but about things of even greater importance than this, concerning ourselves, our standards and methods of living, our ideas and our ideals. It has taught us that we have much yet to learn in handling disease and medical problems, and especially is this true in regard to tuberculosis. While our ideals will remain the same our ideas must change to suit the times. We have fought and conquered the Hun, to make the world a decent and safe place in which to live. Now, let us attack this other enemy, tuberculosis, with equal vigor and determination, in order to make the world not only a decent but a healthy place in which to live. It is right and proper, then, that at the annual meeting of such an association as this, a nation-wide group of earnest men and women, that we take a survey of our present situation and inspect fearlessly and impartially our methods and means of offence and defence against this nation-wide scourge.

It was recently quoted in a medical journal that 22% of all the men disabled for whatsoever cause from the United States Army or Navy were so disabled on account of tuberculosis. While I do not for a minute believe that this figure is correct or that the actual proportion of men incapacitated on account of tuberculosis was as high as this, the incidence of tuberculosis in the Army and Navy was sufficiently great as to merit grave consideration. But I am unwilling to call the situation created by the discovery of this large number of tuberculous men a "war" tuberculosis problem. It is a problem that has been with us, and will remain with us in times of peace as well as in war; it is simply one of many that have been vividly called to our attention by the present emergency.

TUBERCULOSIS SURVEYS.

There are two points that appear to me as especially worthy of mention. One of these is that we have reached the time when we must quit our present attitude of waiting for the tuberculous patient to turn up; waiting for the physician to report this or that case, or waiting until the patient himself comes to the dispensary for help and advice. This policy of watchful waiting must be abandoned as it was finally abandoned in the United States. A more aggressive policy must be instituted. We must seek out the patient; we must find him and force him, even against his will, to take proper measures to protect himself and the community. We must take measures, harsh ones if necessary, to stimulate and prod the medical profession and boards of health into greater activity.

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* Address delivered at the meeting of the Canadian Tuberculosis Association, Ottawa, Canada, Oct. 9, 1919.

Some fifteen years ago, when I first started in tuberculosis work in the Out-Patient Department of the Massachusetts General Hospital, I found the tuberculous patient to be the stray dog of the clinic; an unwelcome guest, to be kicked here and there, and to be gotten rid of as soon as possible. He was given a prescription for some cough medicine or a tonic, and was told to return in a few weeks, the interval usually made as long as possible. As far as I could, I did my best to change this, and instead of encouraging the patient to stay away I encouraged him to return, and, in many cases, against his own will, persuaded him to do what was necessary for his health. In a very modest medical article, the first one I ever wrote, I decribed my efforts. Dr. Richard Cabot suggested to me the title, which I liked, and which I have thought of many times, *i.e.*, "The Aggressive Treatment of Pulmonary Tuberculosis." We must adopt this aggressive attitude toward our problem. We must not wait until the problem is at our doors, until it comes to us, but we must take the initial step and go out after it.

How can we best do this? Every wise leader before a battle or conflict of any kind does his best to find out the strength of the enemy, not in vague generalities but in actual facts and figures. Too much have we in the tuberculosis campaign dealt in vague generalities. We have taken the reports of local boards of health, for instance, at their face value. Because few cases were reported in any given community we have taken it for granted that there were few consumptives in that community. Because a certain town or city was rich, prosperous, and had little or no tenement life in its midst, we have taken it for granted that there was and could be no consumption. We must change our minds as to this. Because a certain city in my own state has built and maintains an excellent tuberculosis hospital, the beds of which have never been more than three-quarters filled, we have taken it for granted that this city was more than doing its duty as far as tuberculosis was concerned. The city finally asked for a survey in order to obtain more money from the state for the support of its tuberculous patients. The result of this survey demonstrated the fact, beyond the shadow of a doubt, that while the hospital was an excellent one and the patients given the best of cure, and while there was an excellent tuberculosis dispensary with high grade physicians in attendance, the city was not meeting or nearly meeting its problem. Over 50 patients were found, who had kept at their work in factories and mills until within one month of their death from consumption, and over 150 who remained at work until within three months of their death. The beds in the local hospital had remained vacant, not because there were no patients to fill them, but because these patients were not aggressively sought after and sent to the hospital. The patients were there in the city, urgently in need of treatment, many of them known to the health authorities, and the vast majority of them known to their local physicians, but because no one had come to them and had worked with them and finally persuaded them that they were in need of hospital or sanatorium treatment they had remained in their homes and had not only died there but had given the disease to many others about them. Therefore, I would urge upon you that in the community in which you live, wheresoever it is, be it large or small, urban, suburban, or rural, rich or poor, agricultural or industrial, you first find out exactly the size and extent of your tuberculosis problem; that you take nothing for granted; that you discard all the facts and figures that you have at present and that you get to work and really find out conditions as they are. I guarantee that you will be surprised and, I fear, in many cases, dismayed and discouraged at the results. You will find tuberculosis lurking in places where you had no idea that the disease could exist; you will find it among the rich; you will find it in factories and shops of the very highest grade, and often you will not find it where you most expect to find it. Such surveys have a most wholesome effect upon us all who are engaged in this work. In terms of money they need not be expensive. The essentials of such a survey are first, a wise and tactful physician who knows how to conduct it properly; second, a nurse or corps of nurses who can go into the homes of the people and make a house to house canvass; third, some one who can tabulate and arrange the facts and figures obtained from such a survey and who can make proper deductions therefrom, and finally, a public opinion properly educated and developed, which will see the need of such a survey and which will coöperate with you and not oppose your efforts. Such a health survey, then, which is by all means the best method we possess of finding out the extent of our problem, is one of the present needs of our tuberculosis campaign.

STANDARDS IN DIAGNOSIS AND TREATMENT.

My second point may appear to you unnecessary or even trivial and absurd. It is this, that we come to some definite unanimity of opinion as to what constitutes tuberculosis. This, you will probably say, is a problem for the medical profession to decide. Quite true, but until the medical profession has decided and taken action upon this point there will be confusion in our efforts and injustice and wrong done to many patients. I am firmly convinced that in this city, as in Boston, I could take a patient with certain history, signs, and symptoms, to nearly a dozen different physicians, each of high standing, each above the average skill in the diagnosis of tuberculosis, and get as many different opinions. One would say that the patient did not have tuberculosis; another might say that he had tuberculosis but that it was not active; another that it was active tuberculosis; one that the outlook was good; another that the outlook was bad; one that the patient needed home treatment; one that he needed hospital treatment; and one that he needed sanatorium treatment. There undoubtedly would be one who would say that he needed no treatment at all. As long as this state of affairs exists, and to a greater or less degree it does exist in every medical community, we are not going to get the results which we should. We can standardize our hospitals, our sanatoria, and our dispensaries, but can we standardize our brains? Unfortunately no, but we at least can standardize the methods by means of which the medical brain arrives at medical conclusions. This lack of agreement as to methods of diagnosis has been strikingly demonstrated in the American Army and I am sure that it holds true in the Canadian Army as well. At one camp or cantonment where the medical officer in charge of the tuberculosis work was an x-ray enthusiast the rejections on account of tuberculosis were largely based on x-ray evidence. In another camp where there were equally high grade men but with different ideas the x-ray evidence was to a large extent discarded and the decision of these problems rested on clinical evidence alone. Some men were discharged for tuberculosis with a diagnosis based purely on the signs in the lungs and symptoms related to the lungs, while in other cases the same diagnosis was made and the same course of action taken when the findings in the lungs were practically negative and the diagnosis based on entirely different evidence.

This is not as it should be. I can assure you that the confusion as a result of this lack of any standardization of methods in the Army and the injustice which has been done to many men exists just as much in our civil life today as it does in the Army and Navy. For years I have struggled against this difference of opinion and the resulting chaos in my own mind and among my patients in Boston. I do not for an instant claim that my own ideas have been right and the ideas of my confreres have been wrong, but I simply know that there has been very little in common among us in regard to the early diagnosis of pulmonary tuberculosis. Many patients have gone from my clinic at the Massachusetts General Hospital to the clinic at the Boston Consumptives' Hospital and to other clinics and have obtained opinions diametrically opposite from mine. And yet we are all working and striving for the same thing —to diagnose our patients in the early stages, to give them adequate treatment and to prevent them from infecting others.

The first definite attempt to solve this problem, as far as I am aware, was made about a year ago in Framingham. There has been going on in this little Massachusetts town for the past three years one of the most interesting experiments that has ever been attempted. An attempt has here been made, under the auspices of the National Tuberculosis Association, and backed up by funds adequate to carry on every method of procedure which could possibly be of assistance, to demonstrate what our modern methods can really accomplish in the way of eradicating tuberculosis and in solving the health problems of this community. The first thing that was done in this experiment was to carry on a survey such as I mentioned above, in order to find out, if possible, exactly how many cases of tuberculosis of any form whatsoever there were at hand. And here, in making a wholesale examination of the inhabitants of this town, we were at once confronted by the difference of standards, opinions, ideas, and methods among the various physicians employed. As a result, a committee was appointed to draw up a set of standards in diagnosis of tuberculosis, which standards, although as yet imperfect and incomplete, are a step in the right direction and a distinct help to us in our work.

The second step, therefore, that I would urge your association to undertake would be in this direction—that you appoint a representative committee to formulate a set of standards in your work. There should be such standards not only for diagnosis but for treatment. The physician, or indeed the nurse or social worker, should have something definite to help in deciding whether to advise sanatorium treatment, hospital treatment, or home treatment. There should be uniformity of records, and of dispensaries, and the time is soon coming, I am convinced, when there will be standardization of hospitals and sanatoria. At first glance this may seem like carrying the military regime altogether too far. I do not believe that this is the case, and were it so I should be the first to rebel against it. These standards, whenever used, must be simply looked upon as hints and helps. Should they be regarded as definite lines of work from which no deviation must be made they will do harm rather than good. Above all they must be used with tact and common sense. Under such conditions I am sure that they will do good.

These two points—tuberculosis or health surveys and some form of standardization of our work I believe to be important in any anti-tuberculosis campaign.

Now let us consider certain other phases of our work and ask ourselves the question first, whether the old methods have outlived their usefulness and should be altered, modified or discontinued altogether; and second, whether new methods recently called to our attention should or should not be adopted. First I should like to consider our

EDUCATIONAL METHODS.

Almost every association, great or small, maintains a lecture service of some kind. Whether or not a lecture is going to do good and really accomplish something, depends not on the information imparted by the lecturer, but on the personality of the lecturer himself and on what he does *before* and *after* his formal talk. Personally, I have lectured to almost every known kind of an organization, and to tell the truth I have reached the conclusion that I have accomplished remarkably little thereby, as far as the lecture and the information I gave out were concerned. The good that has been accomplished by such lectures and gatherings of people has been by individual work with certain interested persons, rather than by anything I said to the gathering, as a whole. Therefore, I rather feel that lecture service as such, except in special individual instances where you have the right man to give the lecture, is not a very important part of our work.

TUBERCULOSIS EXHIBITS.

We have all been to tuberculosis exhibits and have seen charts and statistics, good rooms and bad rooms, and photographs of all kinds, and most of us have left with our minds in a whirl and with very little definite or concrete information to help us, except that we wondered why we were not all dead. Personally, I do not think tuberculosis exhibits are of very great importance except in those communities where education as far as health is concerned is still in the primary stages; and here, as in a lecture service, more depends on the person who demonstrates the exhibit than on the exhibit itself. The exception I would make to this is that concerning children. I remember only too vividly, when a boy, of seeing a chart of an alcoholic's stomach that made a deep impression on me; if you can make an impression with tommy-rot such as this, you can certainly make an impression with things that are really good, such as the need of fresh air and cleanliness, etc.

THE PUBLIC PRESS.

One of the most neglected fields of educational work is the public press. Here is a means which we have not used enough to reach all classes of people, and especially the medical profession and that group of men whose duty it is to frame and carry out our laws. I would suggest, therefore, that it become an important function of every tuberculosis society to maintain a press service and to see that this work is done by someone who knows how to write newspaper English and who appreciates the importance of making such items of some news value as well as of educational value.

MOVING PICTURES.

The moving picture theatres are now used to a certain extent in the States for educational purposes, but might be used must more. There is still an amazing lack of information in the minds of the people as well as in the minds of the medical profession in regard to our public institutions such as state, county and local sanatoria and hospitals for consumptives. In countless instances friends and relatives of patients and even their physicians have come to me finding fault with this or that institution which they have never visited or seen. Here, then, by means of moving pictures, is a field for very definite, practical, and valuable work.

EDUCATION OF CHILDREN.

Some years ago I assisted in the passage of a bill in Massachusetts which required that tuberculosis and its prevention should be taught in those grades of our public schools in which the subject of hygiene and physiology were taught. For this I was severely criticized by an older physician who could see no possible reason why children should be taught anything about such a horrid and unpleasant subject as tuberculosis. I could not agree with him then and I cannot agree with him now. I believe that this whole matter can be taught in a way which will teach valuable lessons and yet which will do no harm whatsoever. We must teach the children just as we must teach the entire public that the rules which govern tuberculosis are simply the rules of decent and right living. The whole boy scout and the modern health crusade movements are efforts in this direction. More depends upon the tact, perseverance, and skill of the individual teacher, be she one of the teaching staff or a nurse, than upon anything else. It is certainly one of the important duties of any tuberculosis association to see to it that school children are given practical instruction in the rules of hygiene and right living.

EDUCATION OF LEGISLATORS.

Finally, and I touch here upon a point upon which I have considerable intimate knowledge, I would urge that you educate your legislators. In the United States, comparatively slight efforts are made to control or influence for good medical legislation in the state legislatures, and even the little that is done is too often delayed until this or that bill has reached a stage when it is given a hearing; at such a time as this, unfortunately, there is very little chance of accomplishing much. From ten years' fairly close observation of this subject I believe that it is ignorance, not wilful or vicious, but simply plain ignorance on the part of our legislators which leads to so many errors of omission and commission on health matters. They do not know why this or that appropriation should be made. They cannot see the harm that this or that bill is going to do, perhaps not in the present, but in the future, and therefore they do not favor the one or oppose the other. The best time to reach the legislator is before his election, but in order to influence him there must be some method whereby he can be approached, not by one or two interested individuals, but by many such. Your association, if it has not done so already, should develop the machinery whereby your legislators can be approached either by letter or, better, in person, by hundreds of physicians and by prominent men and women, so that they will see that what is asked is not merely the individual whim or fancy of one or two but the firm and decided opinion of many from all races and walks of life.

THE SANATORIUM.

During recent years, various articles have appeared, asking the question as to whether or not the sanatorium is worth while or has outlived its usefulness. How often have you and I, when we have seen this or that patient discharged from a sanatorium apparently well and strong, and in six months' time relapse into a condition worse than he was in before, asked ourselves the question—what is wrong with the sanatorium and its treatment and why are not its results more permanent? The sanatorium is worth while. This can be maintained beyond the shadow of a doubt, but the sanatorium must do more than it does now. The real sanatorium must be made to symbolize something more than a splendid group of buildings beautifully located and surrounded by the best that nature can give, where there is good food and careful medical supervision. It must mean more than this. The word "sanatorium," coming from the active verb, "sanare,"—to heal—must mean that the patient is kept under supervision not merely while he is within its walls but for months after his discharge. This is what modern sanatorium treatment must mean, and until it does mean this our results will not be what they should. A proper system of after-care work, following up the patient after his discharge, must be looked upon as a necessary and integral part of every sanatorium. It should begin in the sanatorium itself and should be carried on after the patient has left. The patient who is about to leave or who shows signs of becoming restive should be approached by some nurse or social worker, who, kindly, tactfully, yet firmly, will either try to persuade him to remain as long as he should, or else pave the way for his future career, and who, after the patient has left the institution, will visit his family, inspect his home, get in touch with his physician and his employer, and see that he continues the methods of treatment which have helped to bring back his health. This is real sanatorium treatment.

CONSULTATION SERVICE.

One of the new, and what promises to be one of the most valuable experiments in our tuberculosis campaign, is now being carried on in Massachusetts. I refer to our consultation service. With the help of the Massachusetts Tuberculosis League, Dr. H. S. Wagner, superintendent of the recently opened Barnstable County Tuberculosis Sanatorium, devotes part of his time to seeing, with physicians of this county, various patients at the request of such physicians, concerning whose diagnosis and treatment there is doubt. So far, this method has proved eminently successful. The physicians feel that they have here a man who is in no way in competition with them, but who can help them out in difficult cases among the poorer class of patients who cannot afford to pay a large consultant fee, while for the sanatorium superintendent himself, it offers a chance to see other conditions besides tuberculosis, and to broaden the sphere of his usefulness. I believe that in the future, it will be one of the duties of every well equipped sanatorium to maintain not only an out-patient department, but a consultation service along the lines here described.

TUBERCULOSIS DISPENSARIES

Look up, in the Century Dictionary or in any other encyclopedia, and you will find that the word "dispensary" is briefly defined as a place to which sick people may go and receive treatment. This must not be our definition. Just as a sanatorium without a nurse or a social worker to carry on after-care work is not a sanatorium in the proper sense of the word, so a dispensary cannot be called a real dispensary as far as tuberculosis is concerned unless it is equipped with a nurse or corps of nurses, depending upon its size, who will visit the home of the individual patient, advise and counsel the family as well as the patient, and who will instruct the patient in the details of what he must do. There are other essentials in addition to this that go to make up a proper dispensary. Its location must be accessible to those whom it is expected it will serve. It should not be in an isolated district where either a long walk or trolley ride are necessary to reach it. Its rooms should be cheerful, sunny, and bright. There should be a special day for children, and of particular importance, except in small communities, it should be open one or two evenings a week, so that men or women need not give up an entire day or even half a day in order to get medical advice. If possible, the physicians conducting the examinations should be men specially trained in their work, but above all, these physicians must have tact and common sense. I would rather have a levelheaded general practitioner who is endowed with common sense in charge of my dispensary than the most skilful and scientifically trained sanatorium physician in the world if he did not have this valuable quality.

NON-PULMONARY TUBERCULOSIS.

Hitherto our efforts have been devoted almost entirely to tuberculosis of the lungs. We have had to do this because this is the form of the disease which is so dangerous to others. In the vast majority of cases, tuberculosis of glands, bones or joints, while dangerous and distressing to the individual patient does no harm to those about him. The time is coming, in my own state at least, and I believe in many other places, when we can afford to take the next step in advance and to give those patients who are so fortunate, or I should rather call it unfortunate, as to have the disease outside of their lungs, the same chance of getting well as those who have the pulmonary tuberculosis. It is a curious and unfortunate state of affairs that the patient who comes into a dispensary, and especially if he is lucky enough to have a hemorrhage in the presence of the doctor, is immediately diagnosed as a consumptive, and, if possible, sent to a sanatorium or given the fresh air and proper hygiene of which he is in need; while the man, woman, or child who has glands in the neck or tuberculous disease in the kidney or elsewhere is looked upon as a proper subject for surgical skill, or too often, the lack of it. Treatment in this case is usually devoted to that small part of his body which is diseased, while the man himself who owns the disease is neglected. We have reached a stage when this should be changed. We must spread the news that tuberculosis is the same no matter in what part of the body it is located, and that the same sunshine, fresh air, and proper food that cures the consumptive will likewise cure the child with Pott's disease, or the man or woman with enlarged glands in the neck.

TUBERCULOSIS LEGISLATION.

Do we need more laws in regard to tuberculosis? I believe not. Tuberculosis in Canada, as well as in the United States, is a reportable disease, and I fear that as large a proportion of cases in your country go unreported as in my own. More laws will not help this, nor is this state of affairs entirely the fault of the medical profession. Over-zealousness on the part of local health boards has done harm to many patients and prejudiced their physicians strongly against reporting future cases. Education as to the need of reporting tuberculosis on the one hand, and tact on the part of local authorities on the other, are what will solve this problem.

How much do anti-spitting laws accomplish? Very little, I fear. Here again, education as to habits of cleanliness and decent living, and not more legislation is what is needed.

What can we do about the incorrigible consumptive? Will the time ever come when he can be forcibly restrained? I thought so once, but do so no longer. Neither in Canada nor in the States, in my opinion, will we ever be able forcibly to remove or control the wilfully careless and incorrigible consumptive. Education again and not legislation is the secret of success.

I am rash enough to believe that the harm done by the careless spitter and the incorrigible consumptive is, after all, very slight. What we have accomplished in reducing the mortality from consumption during the past twenty-five years, and what we shall accomplish in the future is *not* because by means of sanatoria we have cured a number of patients, nor because we have prevented the spread of infection by providing beds for advanced consumptives, but because we have spread the gospel of right living. It is what we are doing to solve the tenement and housing problem; it is school and factory inspection and hygiene; the prevention of industrial diseases; it is a pure milk and water supply, thereby eliminating typhoid and other acute infectious diseases; open air schools, boy scouts, health crusaders,—it is all this, and not our efforts directed solely to the tubercle bacillus or the tuberculous individual that is ridding the world of tuberculosis.

Therefore, friends, let us broaden our vision; let us assume an aggressive attitude toward our problem; let us know what our problem is as to every minutest detail, but let us attack it from the broadest and widest angle. Above all, let us "Welcome each rebuff that turns earth's smoothness rough" lest we stagnate and rest idle in "the harbor of indifference."

Original Articles.

DIET REDUCTION WITH RETENTION OF PROTEIN TO RELIEVE GLYCOSURIA IN DIABETES MELLITUS.

By R. L. Fenlon, Ph.G., M.D., Iowa City, Iowa.

[From the Laboratory of Chemical Research of the Department of Internal Medicine, State University of Iowa.]

Because of the theories outlined below, this method of diet reduction during the beginning of hospital treatment is being used at the University Hospital for relief of glycosuria, and was used in the series of cases described in this paper.

The theories underlying the diet reduction method are as follows:

1. By keeping the protein intake of the diet at a necessary level, the tendency to a development of acidosis is decreased as the patient does not have to burn his own body fats.

2. Protein is needed to replace that lost by the wear and tear on the tissues during the metabolic changes of the body. Chittenden's standard is 0.12 grams of nitrogen per kilogram of body weight. We conclude that this amount of protein is necessary to the body during a diet reduction. This would average 40 to 50 grams daily. This amount of protein is increased in this method because of the altered metabolic changes in diabetes.

3. With the protein intake maintained at a definite level the percentage of carbohydrate in the diet would be relatively decreased. Under preparatory treatment to fasting[1] the protein and fat are both reduced, leaving the carbohydrates relatively high. This is a modified sugar tolerance test on a patient who cannot metabolize sugar properly.

By keeping the percentage of sugar low in the food intake the system might be more quickly drained of the excess sugar present in the blood stream.

4. The tolerance of the patient is more easily and quickly determined.

5. There is less complaint of hunger on the part of the patient by this method of reducing diet.

6. The protein in the diet by maintaining the serum protein in the blood, possibly aids in the nutrition and functioning of the kidney during the diet reduction[2].

The Method of Diet Reduction.

First step. Eliminate the fats from the diet for one or two days, at the same time maintain the proteins and carbohydrates each at 60 to 100 grams (60 grams protein in the severe cases up to 100 grams in the mild cases).

Second step. Leaving the proteins as before, halve the carbohydrates each day until the glycosuria is relieved. [Note: The carbohydrates may be reduced more gradually as indicated by the case.] If the glycosuria still persists when 10 grams of carbohydrate are reached continue at 10 grams for three days unless sugar free before. If glycosuria is still present at end of three days on 10 grams use step three.

Third step. If glycosuria is still present add 50 to 100 grams of oatmeal to the diet for two days.

Fourth step. If glycosuria persists, repeat the diet used just preceding the oatmeal days, lowering the proteins one-third. Keep the patient two days on this diet if necessary.

Fifth step. If not aglycosuric starve, giving only fat-free broths and water for a two-day period.

Sixth step. If necessary, revert to the oatmeal diet for two days and again starve.

When building up the diet, if starvation has been used, build up the protein first to 50 or 60 grams. Then gradually increase the carbohydrates to the danger point. Lastly add fats, 5 to 10 grams a day in severe cases and 25 grams per day in mild cases. If starvation was not used, the protein is already in the diet. In this case increase the carbohydrates 5-10 grams daily to danger point. Then add in the severe cases five grams every second or third day. In mild cases increase 10 to 15 or more grams daily. When the carbohydrates reach 50 grams, if a break has not occurred before, increase fats as stated above.

CHART.

Summary of series. 15 cases. No deaths to date. 100% discharged sugar and ketone free.

Incidence according to age:

Up to 10 years	1 case
10 to 20 years	1 case
20 to 35 years	6 cases
35 to 60 years	1 case
60 and over	6 cases

Incidence according to sex:

8 females 7 males

Case No.	Sex	Age	On Admission				On Discharge		Return Cases. Diet on Admission			
			% Sug.	Gm. Sug.	Di.	Acetone	Sug. Free	Ketone Free	Pro.	Fat.	Carbo.	Cal.
1.	F.	65	0.73	5.58	0	0	yes	yes				
2.	F.	64	7.7	154	0	0	yes	yes				
3.	F.	60	0	0	0	Trace	yes	yes				
4.	M.	61	0.312	5.1	0	Slight Trace	yes	yes				
5.	M.	27	8.69	361.05	+	+++	Left	House				
6.	F.	66	1.74	15.66	0	0	yes	yes				
7.	M.	19	3.44	36.12	0	+	yes	yes				
8.	F.	46	5.72	65.18	+	++	yes	yes				
9.	M.	21	6.66	118.6	0	0	yes	yes				
10.	M.	23	4.76	135.6	Very Sl. Trace	+	Left	House				
11.	F.	34	5.4	178.2	+	+	yes	yes				
12.	F.	61	6.24	24.9	0	0	yes	yes				
13.	M.	6	0	0	0	0	yes	yes	40	35	31	600
14.	M.	33	0	0	0	0	yes	yes	70	90	60	1330
15.	F.	20	0	0	0	very slight Trace.	yes	yes	60	90	50	1250

Results obtained by the use of this method of diet reduction.

All cases showing diacetic acid in the urine when admitted to the hospital gradually become diacetic free from the first day of admission. Diacetic acid had disappeared from the urine in each case before the urine was sugar free, with the exception of Case 5, who had a very slight trace (See cases 5, 8, 10, 11). Two cases of another series under starvation treatment upon admission did not have diacetic acid in the urine. However, when fasted, diacetic appeared in both cases and did not disappear until the protein in the diet reached 55 to 70 grams. All cases showing acetone in the urine when admitted to the hospital gradually become acetone free from the beginning of the treatment with this method of diet reduction. In other words, the cases showing a tendency toward acidosis improved from the onset of the treatment. Rendering the patient sugar free is usually one of the critical periods of the disease.

Cases coming to the hospital without ketonuria did not show ketone bodies in the urine at any time during diet reduction.

The average number of diet days required to relieve glycosuria was four days.

Two cases of this series required use of oatmeal diet days[3] or step 3. One of these became aglycosuric on step 4, the other by the fifth step.

The results according to the time required to establish the tolerance:

Case 6 discharged the 12th day with a diet of 100 grams protein, 90 grams fat and 90 grams of carbohydrates, a total of 1575 calories.

Case 4 discharged the 14th day with a diet of 110, 115, and 100 grams, respectively, a total of 1875 calories.

Case 2 discharged the 13th day with a diet

Case No.	Diet on Discharge				Blood adm		Blood on Discharge		Diet Days for urine to Become Sug. free	Notes
	Pro.	Fat	Carbo.	Cal.	Sug.	Fat	Sug.	Fat		
1.	60	90	90	1410	.374	.666			2.	Combined with nephritis.
2.	100	110	100	1790	.333	.613			2.	Discharged 13th day of treatment.
3.	70	70	90	1270	.325	.671	.181	.638	Blood Sugar normal at 8th day	
4.	110	115	100	1875	.238	.605	.166	.614	1.	Discharged 14th day.
5.					.422	.782			10.	Refractory Patient.
6.	100	90	90	1570	.357	.708	.183	.656	1.	Discharged on 12th day of treat.
7.	90	100	85	1600	.214	.606	.080	.547	2.	
8.	65	75	45	1115	.250	.708	.122	.676	4.	
9.	100	100	90	1660	.285	.536	.140	.574	3.	
10.					4th day .134				5	Refractory Patient.
11.	100	90	45	1390	.300	.908			8.	
12.	100	100	70	1580	.286	.566			2.	
13.	70	70	50	1110	.085	.647				"gained weight Looks better" (Mother's report)
14.	100	115	85	1780	.153	.65	.095	.632		Gained 5 pounds 1st 2 months out of Hospital
15.	85	85	75	1405	.08	.815	.08	.790		Once broke on 40 gm. Carbo.

of 100, 110 and 100 grams respectively, a total of 1790 calories.

Case 15. During the first hospital treatment glycosuria appeared when the carbohydrate of the diet reached 40 grams. During the last admission she was sugar free during the entire course. Carbohydrate tolerance was 75 grams at the end of the last admission. Glycosuria did not appear during this admission as the patient did not wish to have the tolerance increased above 75 grams at this time.

The phlegmon on the scalp in Case 5, after persisting for two months, healed during treatment.

In Case 1 combined with nephritis there was gangrene affecting both feet. The process was arrested during treatment.

In Case 2 during the first part of the treatment the patient could not read postal cards; four weeks later she could read without difficulty and do embroidering.

Case 6 had cystitis; this was the chief complaint on entering the hospital. This was gradually relieved during the treatment of diabetes.

Case 13 has gained in weight and looks much better, according to the reports sent back to hospital by the mother.

Case 14 gained five pounds in weight the first two months on the final tolerance.

Case 2, upon admission, showed 7.7% sugar; discharged on the 13th day with a diet of 1790 calories.

The points of interest observed during this series and to be confirmed in future cases are as follows:

1. Avoid discharging a patient with a fat content in the diet over 15 grams higher than the next highest constituent of the diet.

Case 15 was discharged (from a former admission) with a diet as follows: protein, 60 grams; fat, 90 grams; and carbohydrate, 50 grams. On discharge the acetone in the urine was a single plus. The patient, on return to the hospital, stated that at no time did she take the full amount of fat in the diet. On the present admission acetone was present in the urine as a very slight trace only. On rebuilding the diet with the fat and protein corresponding the patient left the house ketone-free.

2. Try to avoid the appearance of sugar in the urine after the patient becomes sugar free. Breaks of this kind seem to sensitize the system to sugar and to decrease the final carbohydrate tolerance.

3. Discharge the patient following the first course of hospital treatment with a diet just sufficient to meet the caloric requirements. Do not attempt at this time to push the diet to the limit: rather give the body a rest for a time and build up the diet on a future occasion.

In building up the tolerance of such a return case, endeavor to keep the carbohydrate (in each daily increase of the diet) at the same percentage that it was in the diet on the previous discharge. By taking into consideration the specific gravity of the urine and the concentration of the 24-hour specimen, an approaching glycosuria may be indicated. A gradual increase in the specific gravity during the last few days of hospital treatment is a warning that the carbohydrate content of the diet is set too high for a final tolerance.

4. Blood sugar readings are relatively higher with advancing years.

References.

[1] Joslin's Treatment of Diabetes Mellitus, 1917, pp. 303, 305.
[2] New Series No. 34 Scientific Memoirs by Officers of Medical and Sanitary Department of the Government of India, p. 64.
[3] Hamburger: British Medical Journal, March 8, 1919.

THE PATHOLOGY OF "INFLUENZAL PNEUMONIA." *

By Frank P. McNamara, M.D., New Haven, Conn.

[From Brady Laboratory of Pathology, Yale Medical School, New Haven, Conn.]

This paper is based on ninety-five post-mortem examinations, eighty-two of which were performed at the Brady Laboratory of Pathology at the New Haven Hospital, which is the teaching hospital of the Yale Medical School. The other thirteen were performed at the United States General Hospital No. 16 in West Haven. All were done under the direct supervision of Dr. M. C. Winternitz, Professor of Pathology and Bacteriology at the Yale Medical School, and it is through his kindness that I am permitted to give you this report. More complete studies, in which all the phases of the disease are taken up in detail, are now in press. As the anatomical changes in the respiratory tract are the most constant and by far the most important, they will be considered in some detail, while the more striking extra-pulmonary lesions will be touched upon briefly.

It must be stated at the start that we do not know the etiology of influenza. At present it is the general consensus of opinion that the influenza bacillus is not the primary etiological agent. Perhaps the most promising work toward solving the problem is that of various groups of French and English workers who have found a filterable virus in the blood of influenza patients. When injected into the blood stream of monkeys, the virus causes a hemorrhagic condition of the lungs. Of course, this work is yet to be verified. We are also unable to state where the initial lesion occurs, or how it manifests itself. While, undoubtedly, the first recognizable symptoms occur in the upper respiratory tract, the possibility that the disease is primarily a blood infection or that it may first attack the lung, must be kept in mind.

You are only too familiar with the intense cyanosis which was observed in the influenza patients who developed pneumonia. I believe that it was considered a very bad prognostic sign. At the post-mortem table, the face, neck, and upper chest were often literally plum color, especially in the young, robust adults who were seen so frequently in the first weeks of the epidemic. Frothy, blood-tinged fluid bubbled from the nose and mouth in nearly all the patients. Jaundice was quite frequently seen, and was probably due to an increased destruction of red blood cells and to cloudy swelling of the liver, causing obstruction of the bile capillaries. The above and an intense rigor were the most striking features on external examination of the body.

On opening the thoracic cavity, the pleural surfaces were distinctly more wet than usual, and an effusion of two or three hundred cubic centimeters of faintly blood-tinged serous fluid were found in a good percentage of the cases. Later, fibrin, in small or large amounts, was more frequently seen. Comparatively rarely

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* Read before the Worcester North Branch of the Massachusetts Medical Society, Oct. 28, 1919.

was there a frankly purulent fluid found, and then only in late cases.

The trachea and the larynx are deep red in color, due to congestion, and often small punctate hemorrhages can be made out in the mucosa. The congestion increases progressively as the bifurcation is approached. Superficial ulcerations are also common. Over the surface there is an exudate composed of clear or faintly blood-tinged mucus with some fibrin. Membranes similar to those seen in diphtheria are not found. Microscopically, the mucosa is exfoliated in part and covered by mucus, fibrin, some red blood cells, and cellular debris. The submucosa is intensely injected and very edematous. Often there are extravasations of red blood cells into this layer. The process is superficial and only rarely extends to the glands of the submucosa, but it is very evident that the protection against bacterial invasion, given by a normal mucosa, is destroyed. Thus the bacterial flora of the mouth have ready access to the lower respiratory tract.

The lesions in the bronchi and bronchioles are more intense than those in the trachea. They vary somewhat, depending upon the duration of the disease, but often in the same lung, early and late lesions are encountered. Study of the earliest lesions show the epithelial cells to be more granular than usual, and their nuclei are pyknotic. The submucosa is congested and edematous, while the lumen of the tube contains serum and mucus. A more advanced stage shows hyaline necrosis of the epithelium which may be lacking over large areas, and engorged blood vessels may jut out into the lumen of the tube. Sometimes a ruptured vessel fills the tube with red cells. Bacteria, scattered diffusely or in rounded masses, are seen in the lumen, which also contains serum, red blood cells, and cellular debris. The necrotizing process may involve only the mucosa or may extend through the wall of the tube. In the early stages the lack of polymorphonuclear leucocytes in the exudate is very noticeable. Later they invade the lumen or the wall of the tube, and may even form a wide zone about it. This is all the more striking where such a bronchiole is found with normal lung surrounding it. However, it is evident that with complete destruction of the wall, the process may extend to the surrounding lung, giving rise to peribronchial pneumonia or going on to actual abscess formation.

Sooner or later, if the patient survives, repair begins in the trachea and bronchi. In the trachea where the damage is superficial, the epithelium regenerates very rapidly, and resembles squamous epithelium. Probably in time it becomes normal ciliated epithelium. In the bronchi and bronchioles the changes resulting from the reparative process depends, of course, upon the extent of the initial damage. Probably most of them are only superficially injured, and, therefore, will be restored to normal. In those cases where the necrotizing process has extended into or through the wall, new capillaries and fibroblasts organize the exudate both around the tube and within it. Thus, upon contraction of the fibrous tissue, obliterating bronchiolitis and bronchiectatic cavities result. The regeneration of the bronchiolar epithelium is more striking in this disease than in any other. The actively dividing young epithelial cells, in which mitotic figures abound, can be seen in strands and solid nests, not only about the lumen of the tube, but often extending for a considerable distance out into the surrounding lung. The histological picture is exactly like that of a carcinoma.

We have divided the lungs into three groups: the first, an acute fulminating type where the entire lung is evolved, a second type where the process tends to become localized and where necrosis is marked, and a third type, in those patients surviving a considerably longer time, where organization of the bronchiolar and alveolar exudates is the prominent feature. It must be understood that this division is purely arbitrary and that the groups overlap somewhat, for a lung that shows extensive organization may also show evidences of acute inflammation.

Nearly one-half of the cases studied are of the acute fulminating type, and in this type the patients survived only a relatively very short time. In these cases the lungs are very voluminous and heavy, due to contained fluid. Externally the pleural surfaces may be slightly dulled, or there may be a trace of fibrin. Rarely there is a thick fibrinopurulent exudate over the pleura. Beneath the pleura, small punctate hemorrhage may be seen in all parts of the lung. Toward the apex the lung is pink and distended. Lower down and posteriorly, it is dark red, purple, or reddish brown. Numerous elevated, rounded areas, several centimeters in diameter resembling hemorrhagic infarcts, are found scattered over the surface of the lung. On section, blood red, syrupy fluid literally pours forth from the cut surface. Frothy serous fluid bubbles out of the bronchi, which appear dilated. The cut surface is dark red and meaty, and only rarely has the granular appearance seen in ordinary pneumonia. Sometimes areas involving several lobules may be dark reddish-brown or may even have a greyish appearance, and such areas are firmer than the red ones. Toward the apex the lung is generally congested and emphysematous. The lung is not consolidated, but has somewhat the consistency of a sponge wet with syrupy fluid.

Histologically, intense congestion and subpleural, interlobular, perivascular, and alveolar edema are the most constant findings. Sometimes the alveolar exudate is almost pure fibrin or it may be fibrinoserous. The alveolar capillaries are engorged, and sometimes, due to rupture, the alveoli are filled with red blood cells. Such hemorrhages may involve large portions of the lung. At this stage, polymorphonuclear leucocytes are entirely lacking or are only few in number. Another feature is the bacteria that are seen in the exudate, as cocci, diplococci, or in chains. The most striking picture and one that is peculiar to this disease, is the hyaline necrosis of the terminal bronchioles and alveolar walls, sometimes involving only the epithelium, but often involving all of the structures of the wall. With the death of the tissues of the alveolar wall, rupture is to be expected, and thus the air escapes into the interstitial tissue, and this form of emphysema is met with in a fair percentage of cases. From the surface of the lung the air may escape into the mediastinum, up into the neck, and even up into the face, causing the subcutaneous emphysema with which you are familiar clinically.

The fulminating type of pneumonic process is, therefore, characterized by intense congestion, a tendency to hemorrhage into the lung, an aplastic serous or serofibrinous exudate in which bacteria abound, and hyaline necrosis, slight or great in extent, of the terminal bronchioles and of the alveolar walls. Interstitial emphysema results from rupture of the latter structures.

In the stage of the disease characterized by necrotization and localization of the pneumonic process, the lung retains its increased volume, but the consolidation which is more definite than in the previous stage, is more liable to involve the lower portions of the lungs. At times the process may be lobar in distribution. In general the distribution is lobular and involves all lobes somewhat. The pleural exudate shows more fibrin and may be large, but is more often small in amount. The infarct-like areas are still prominent externally, but now may show evidences of pus, as well as hemorrhages, in their substance. On section, perhaps the most outstanding feature is the thick pus that wells forth from all the bronchial tubes. The latter are distinctly dilated. The cut surface is granular and thick, and hemorrhagico-purulent fluid can be scraped from it with the knife. The consolidation is patchy, some areas being red, others reddish-gray or reddish-brown, and comparatively normal lung may appear between such areas. Small and large abscesses are seen at times, and actual gangrene of the lung is also encountered. Of course, between such extremes there are varying degrees in the involvement of the lung. The histological examination also shows considerable variation in the different parts of the lung. In the upper portions the alveolar exudate may be subsiding, and regeneration of the alveolar epithelium is seen. But even in such areas, the bronchi are filled with pus cells, bacteria, and cellular debris, and often there is a peribronchial pneumonia. Miliary abscesses are formed in the interstitial tissues which are still spread wide apart by the edema. In the more consolidated areas the alveolar exudate is purulent. Through it bacteria, singly or in large colony-like masses, are seen, and about such an area the lung tissue is dead. From this stage the process goes on to actual abscess formation or to the more extensive death *en masse,* typical of gangrene. However, it must be emphasized that in the same section we may have an area with extensive necrosis, while adjacent to it the alveolar exudate may be composed only of serum, the two areas being separated by a band of interstitial tissue. The latter is most certainly a defence against the spread of infection from one area to another.

In those cases in which the patient is able to withstand the disease for a long period, it is only to be expected, with so much destruction of the tissue, that there will be some attempt to repair the damage. You know that in lobar pneumonia resolution nearly always takes place and a normal lung results. In influenzal pneumonia, however, this is not true in all cases. In one-eighth of this series, extensive organization of the bronchiolar, alveolar, and interstitial exudates was found. This percentage is even more striking than it appears at first glance, for it should be remembered that death occurred in such a relatively short time in nearly one-half the cases, that there was no opportunity for the reparative process to become apparent. As a result of this organization, in some of the later cases we found obliterating bronchiolitis and the formation of bronchiectatic cavities, as well as large areas where the alveoli were filled by granulation tissue. Undoubtedly, this will explain many of the chronic pulmonary conditions that may be found in patients who survived the epidemic last year.

A great many of the lungs showed apical tuberculous scars, but apparently the pneumonic process had no effect upon them in the vast majority of cases. This may have been because there was no time for the spread of the tuberculous process. In one case, however, the patient survived for thirteen weeks, an old tuberculous focus had been lighted up, and there was an intermingling of the necrotizing and organizing pneumonic process with an early tuberculosis in all parts of the lungs.

Dilatation of the right heart, acute splenic tumor, and cloudy swelling of the viscera were found in all cases. We did not find acute nephritis. The other extra-pulmonary lesions that were more or less constantly found, were hemorrhages in the adrenal bodies, in the rectus muscles, and, at times, in the testes. Zenker's degeneration was also found in the rectus muscles. We had one case of ruptured bladder, and in another case multiple bacterial emboli, with hemorrhagic necrosis of the wall of the intestine, were found. There evidently was some tendency for thrombi to form in the peripheral veins. In two cases that were on the road to recovery, death was due to pulmonary emboli. In both instances the clot was set free from the iliac veins.

The bacteriology of the lungs at post mortem showed the pneumococci, the streptococci, and the "influenza" bacillus most frequently. However, we found the staphylococcus aureus, the bacillus pneumoniae, the micrococcus catarrhalis, and a few unidentified organisms. At times one or the other was found in pure culture, but most often two or more forms were found in the same lung. These are all organisms that may be said to be normal inhabitants of the mouth. We believe they are all secondary invaders, gaining access to the lung because of the damaged trachea.

To sum up briefly, we have a disease of unknown origin but one which, undoubtedly, affects the upper respiratory tract and which may be primary in the lung itself. Acute laryngitis and tracheobronchitis result. Because of the injured trachea, the mouth organisms gain access to the lung, perhaps already injured, and there set up a diffuse pneumonia. The latter is characterized at first by edema, congestion, hemorrhage, and hyaline necrosis of the bronchiolar and alveolar walls. Later the process tends to localize, and necrosis of the lung, varying in degree from miliary abscesses to actual gangrene, results. If the patient survives, organization of the interstitial, bronchiolar and alveolar exudates results in fibrosis of the lung, obliterating bronchiolitis and in the formation of bronchiectatic cavities. The bronchiolar epithelium proliferates in this disease as in no other and has the histological characteristics of an epithelial neoplasm.

Note.—The paper was illustrated with 57 lantern slides of the various gross and histological lesions.

THE POSSIBILITIES OF CARREL-DAKIN TECHNIQUE IN CIVIL LIFE.

By Allen G. Rice, M.D., Springfield, Mass.,
Assistant Surgeon, Springfield Hospital.

It was my good fortune while in the Army to receive the benefit of two weeks' instruction at the Rockefeller Institute in the Carrel-Dakin technique. Later, at United States General Hospital No. 10, I was given unhampered opportunity, thanks to the Chief of the Surgical Service, to apply the method in some three hundred cases of chronic osteomyelitis. Firmly convinced through this experience of the efficacy of the Carrel-Dakin treatment and heartily enthusiastic over its results, I determined to continue it in civil practice at the earliest opportunity.

Its introduction into a civil hospital, however, presented from the start some formidable obstacles. Members of the staff had experimented with a spurious "Dakin's solution" compounded by dissolving in water commercial tablets with various euphonious names. Unfamiliar with the Carrel technique each surgeon had individually devolved his own from a perusal of the literature and from his past general surgical experience. The results naturally did not even approach the glowing accounts of successes that flooded war literature. It was inevitable, therefore, that the whole method was generously and for the most part generally scrapped as a fad. Not a few men openly voiced their disgust with it and frankly condemned it at every opportunity. In the next place there was none of the ingredients nor essentials for making Dakin's solution and only a heterogeneous collection of glassware, rubber tubing, etc., that passed by courtesy only as Carrel apparatus. And, finally, there was no technician either in the pharmacy or the laboratory who knew how to make Dakin's solution.

Thanks, however, to an open-minded hospital superintendent and my own immediate progressive chief on the staff, all difficulties were swept away and the opportunity to institute the technique was granted. New apparatus was bought and installed, and the pharmacist was instructed in all the details of the manufacture of Dakin's solution by the liquid chlorine method. Within a week the pharmacist was able to produce a perfect solution that could always be trusted, which in itself was half the battle. Unless the real Dakin's solution can be obtained from a man who can be trusted absolutely to make it always of the proper strength and alkalinity no attempt should be made to practise the Carrel-Dakin technique. There is no short cut to success.

The following six cases were in no sense of the word selected but were taken as they presented. No attempt will be made to analyze them nor to draw conclusions from so small a number The sole purpose of this paper is to show that results can be obtained in wounds of civil life comparable to those obtained in war wounds, and thereby to encourage others to master this comparatively simple technique and then to go and do likewise.

1. W. D., in August, 1917, fell from a tree and sustained a very severe compound fracture dislocation of the left elbow. There followed such a virulent infection that the entire elbow joint became disintegrated, firmly ankylosed, and all the flexor muscles of his forearm sloughed. He was left with two discharging sinuses, one over each condyle, that were still discharging when he was admitted to the hospital, August 4, 1919. An x-ray showed no joint surfaces, and both sinuses leading down to deep sequestra and areas of chronic osteomyelitis. On August 11, he was operated through a longitudinal incision that split the triceps muscle and tendon. The soft parts were pushed forward off from both condyles, sequestra and all diseased bone widely cut away until there was left one wide, saucer-shaped wound with its base composed of healthy bone. The old sinuses were excised and then ignored in the after-treatment. Carrel-Dakin method was immediately instituted. On November 3, the extensive wound had granulated in painlessly and cleanly until only a flat, granulating area the size of a penny remained, and he left the hospital. On November 11, the wound was entirely healed and has remained so. The old sinuses that had been discharging continuously for two years healed ten days after operation.

2. E. D., in September, 1917, received a compound comminuted fracture of both bones of the left leg just above th ankle, involving the tibio-tarsal articulation. Infection followed and although the position of the fragments is excellent he was left with discharging sinuses that never healed. Four times in the last two years the bones were curetted and the cavities packed with gauze. He was admitted to the hospital August 20, 1919, with two discharging sinuses just above each malleolus. An x-ray showed osteomyelitis of the lower four inches of the fibula; an osteomyelitic cavity with sequestrum in the lower end of the tibia; and bony ankylosis of the tibio-tarsal joint. The lower ends of tibia and fibula were fused. On August 23, he was operated through an incision extending from below the tip of the external malleolus eight inches up the fibula. The lower four inches of the fibula were excised, as was the bony fusion with the tibia, and as much of the tibia as was necessary to reach the cavity in that bone. The resulting wound was cup shaped, its walls composed of healthy bone. The sinus in the internal malleolus was excised and thereafter ignored. Carrel-Dakin treatment was immediately begun. On November 20, the large cavity had filled in until there was left only an almost flat granulating wound about an inch in diameter, and he left the hospital. On December 5, the wound was entirely healed for the first time in two years.

3. D. O'C., on January 22, 1918, received a compound fracture of both bones of the left leg three inches above the ankle. Infection followed and she was in the hospital until April 2, 1918, when she was discharged with firm union, good position, but with an open sinus. She was again admitted to the hospital, August 13, 1919, with the sinus still discharging. An x-ray showed an osteomyelitic cavity in the tibia with a se-

questrum, to which the sinus led. She was operated, August 16, 1919, through an incision along the anterior surface of the tibia excising the sinus. The cavity in the tibia was entered, and its walls cut away until it became saucer shaped bounded by healthy bone. Carrel-Dakin treatment was started immediately. The cavity filled in rapidly with clean granulations and on October 13 was entirely obliterated. At that time an old sinus on the back of the leg that had been healed several months broke open and discharged. It was thought that a focus of osteomyelitis had been overlooked, but it cleaned up rapidly, grew gradually smaller, and finally healed on November 15, and has remained healed.

4. G. S. Last May he began to complain of pain, tenderness, and swelling in his right leg, the symptoms varying in intensity from day to day. X-rays disclosed uncertain lesions. On August 16, 1919, he was admitted to the hospital. On August 23, he was operated on through an incision along the middle of the anterior surface of the tibia, the cortex of the bone was drilled through and pus found. A small, localized cavity was disclosed containing about two drams of pus. The cavity was converted into a saucer-shaped wound with healthy bone walls, and Carrel-Dakin treatment instituted. The cavity filled in rapidly and on October 27 was entirely healed.

5. M. R. suffered a compound fracture of the right femur in November, 1917. The wound never healed, so that he has been going about with a discharging sinus ever since. He was admitted to the hospital September 15, 1919. An x-ray showed a small sequestrum lying in a small osteomyelitic cavity. He was operated September 18 by excising the sinus and enlarging the wound longitudinally. The bone cavity was broken into, the sequestrum removed, and the top and walls of the cavity cut away until the cavity had the desired cup shape. Carrel-Dakin treatment was begun at once. The cavity filled in so rapidly that on October 17 the tubes had to be omitted for the simple reason that there was no place to insert them. On October 29 the wound was entirely healed and he left the hospital.

6. H. T. Fourteen years ago he had an acute osteomyelitis of the right tibia which was "scraped" out at the time. The resulting wound has never healed except for an occasional short period. He was admitted to the hospital July 29, 1919, with two discharging sinuses on the anterior surface of the tibia about four inches apart. An x-ray showed several small sequestra lying on the cortex of the bone, which was thickened and irregular in shape. There was no apparent involvement of the medullary cavity. On August 13, he was operated by excising the whole of the old indurated scar and the two sinuses in one mass. To the same extent the cortex of the bone was removed down to but not invading the medullary cavity. This left a shallow trough in the tibia limited everywhere by healthy bone. Carrel-Dakin treatment was started immediately. This wound filled in very slowly although it was at all times free from pus and slough, so that it was not until November 5, 1919, that this comparatively small wound was healed. It has, however, remained healed, which is the longest period of its kind in fourteen years.

Clinical Department.

THE TREATMENT OF CHRONIC ULCERS.

By Frank E. Stowell, M.D., Worcester, Mass.,

Physician in Charge of the Electrotherapeutic Department of Worcester City Hospital and Memorial Hospital.

Under the above term are included varicose ulcers, indolent non-healing ulcers of long standing, bed sores, and ulcers of tubercular origin.

These conditions present a sad picture in the wards and clinics of our hospitals because while seldom causing death, they keep the sufferer from the normal enjoyment of life and often from earning a living. The condition is the more pitiable because they are practically all readily curable and yet are allowed to take up time and space in the wards and clinics which should be used for other cases.

They all present a more or less similar picture. In size they vary from half an inch to five or more inches in diameter. The base is covered with exudate. The edges are elevated and covered wth dead epithelium. The surrounding skin is often thickened and always infiltrated with stagnant blood and red cells. In other words, there is venous stasis and pigmentation in the surrounding area. Thus, the living and proliferating skin elements are bound down with dead material and the capillaries which should supply nourishment, are filled with dark, venous blood.

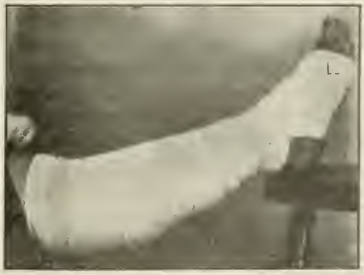
In the face of this, how can we expect to nourish the parts with so-called nutrient dressings or stimulate with ointments when these cannot penetrate, and if they could the proliferating cells would be held back by the dead layers covering them.

Success can be hoped for only by the use of some means by which fresh arterial blood can be made to replace the venous blood in the surrounding capillaries and the base can be kept clean and cell proliferation stimulated.

Such a method is within reach and has been used by the writer in part for fifteen years and in full for seven years, with practically one hundred per cent. success in all cases that stay under treatment at least two weeks or. at the longest, eight weeks. In no case is the patient put to bed, or kept from work as a part of the treatment.

As a large per cent. of these ulcers occur on the leg, we will first describe the treatment of a typical case. Each step and detail of the treatment is important and must be carried out in full.

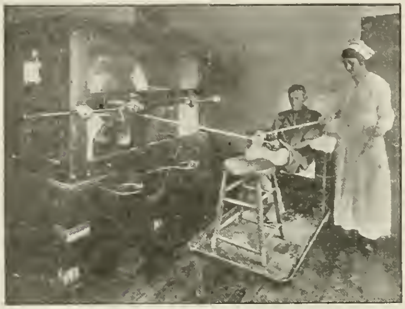
On the insulated platform of the static machine is placed a Morris or other comfortable chair in which the patient sits. Before him on the platform is a small stool on which he places the foot of the leg to be treated. The leg is thus elevated to body level and must be kept so during treatment. Shoe and stocking and all dressings are removed. If this is the first treatment and it is necessary, the foot and leg are first washed with soap suds and rinsed with clear water or bichloride 1 to 2000, then dried. The ulcer is then cleaned with alcohol. As much dead material as possible is removed with forceps and the base of the ulcer is very gently curetted to remove slough and exudate. The ulcer is then cleaned again with alcohol and painted with a 50% tincture of iodine. For this purpose, small toothpick swabs are the most satisfactory. The patient is then connected with the negative pole of the static machine, the positive pole being grounded and the static breeze and sparks thoroughly applied to ulcer and surrounding areas. This usually relieves all pain at the first treatment and can be so regulated as not to be unpleasant. The relief is so great that those patients who object at the first treatment are usually glad to take the second and subsequent treatments. The object of all this is to remove stasis and stimulate healing and it does so with remarkable rapidity. In a short time those showing the greatest thickening and pigmentation, become normal in appearance and granulations rapidly appear. A dry dressing or, occasionally, in the judgment of the operator, a boric ointment dressing is applied and then the leg is bandaged. The last is a most important part of the treatment and must be done correctly. The most satisfactory bandage is a 2½-inch gauze of good quality. The end is moistened and applied to the sole of the foot. This effectually prevents slipping. Then two or three turns are taken about the foot, then a figure of eight is done about the ankle and foot and the bandage is continued up to the knee, making firm, even pressure and leaving no part exposed or without pressure. The bandage must be drawn as tight as the strength of the operator and the strength of the gauze permit. The writer has never seen any harmful results, although at first the legs were watched carefully. The deep veins take up the circulation that is purposely in part shut off. It may be necessary to use a second bandage over the first to get even pressure, and be sure that all parts of the leg are covered. The ends of the bandage are held with adhesive and a strip is put around the foot and ankle; then and only then is the patient allowed to lower the foot. He is allowed to put on stocking and shoe and go about his business. The treatment is repeated three times a week until the ulcer is healed. There is no scarring. After the ulcer is healed, the



A Correctly Bandaged Leg. —This bandage is used no matter how small the ulcer may be. The patient had two small ulcers above the ankle, of two years' standing. Congested area, eight inches in diameter. Pain which caused loss of sleep and giving up work. Two treatments relieved pain entirely. After three weeks he is returning to work. Ulcers clean and two-thirds healed. Hospital case.

patient must wear a tight-fitting elastic stocking going from the foot to the knee. This stocking must be measured for with the foot in the same position as for treatment.

The ulcers, in my experience, never recur if such a stocking is worn permanently when the patient is out of bed.



This Picture Illustrates the Proper Position of the Patient for Treatment.—The nurse was giving static sparks. Man had a small ulcer of over two years' standing, which healed completely in four weeks. He had been in the wards seven weeks with no result. While under my care he continued work as a hostler in a livery stable.

In the case of bed sores and tubercular ulcers as they are located on other parts of the body, the technique is slightly different. They are cleaned as are the varicose ulcers, iodine is painted on, and I may say here it may in all cases be used freely without fear of a burn or injury to the tissues when followed by static sparks or breeze. Then the breeze is used instead of the sparks and a dry dressing of boric ointment is held on with adhesive instead of the bandage, as is the case of varicose ulcers.

Sinuses following osteomyelitis, as well as tubercular fistulae, do equally well. The sinus is curetted clean at each treatment, then swabbed with iodine and the sparks or breeze applied. The fistulae are swabbed out with iodine, then treated as before.

Very recently the writer has used to some extent and very satisfactorily, di-chloramine T in place of iodine or boric ointment and applied it after the electrical treatment, the previous steps being as before.

Closely allied to the above conditions is herpes zoster. The results of electrical treatment in this condition are so satisfactory that it may well be included in this article. As is well known this is of nerve origin, the rash always following the course of some nerve. Treatment should begin as soon as the condition is recognized. If a diagnosis can be made before the rash, so much the better.

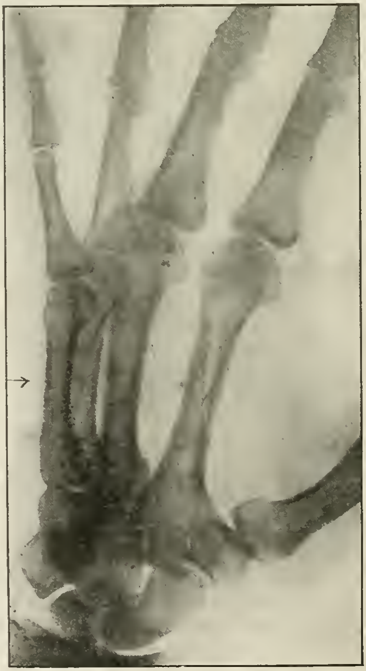
The treatment consists of the application of the static wave current to the spine at the point of origin of the affected nerve and of sparks to the herpes.

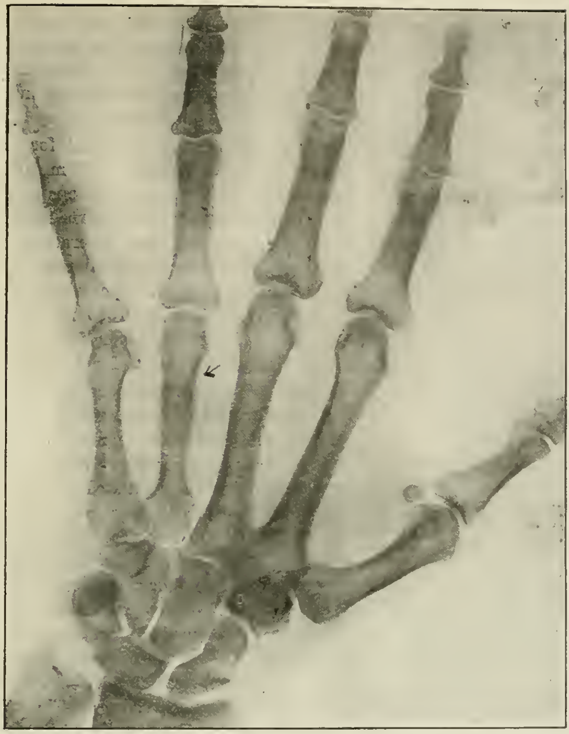
This treatment never fails to relieve the pain completely and to dry the herpes with one or two applications if given at the onset of the disease. In the later stage the result is satisfactory but slower, more treatments being required.

AN UNUSUAL CASE OF METACARPAL FRACTURE.

By S. S. Dearborn, M.D., Nashua, N. H.

My only excuse for presenting this case is the unusual cause, in this instance, of fracture of a metacarpal bone.





C. W., an athletic man of 32, while romping with a nine-year-old child, lifted her by the elbows and on lowering her to the floor felt a sudden, sharp pain in his right hand accompanied by a popping noise which was distinctly heard by others in the room. He presented himself for examination three hours later. The hand was slightly swollen but the characteristic deformity of depressed knuckle was absent. He could close his fist without discomfort. Palpation revealed slight crepitus and this was elicited only by pressure against the distal cord of the third metacarpal. There was only moderate tenderness over the bone. An x-ray showed only a fine crack in the anterior-posterior view, but laterally the fracture is well defined.

* * *

Book Review.

Rules for Recovery from Tuberculosis. Third Edition. By Lawrason Brown, M.D. Philadelphia and New York: Lea and Febiger. 1919.

The appearance of the third edition of this volume, "Rules for Recovery from Tuberculosis," gives evidence of its helpfulness to tuberculous patients. The author has attempted to explain, primarily for the benefit of his own patients, the nature of the disease and the care which must be taken in order to cure it. The prevalence of the tubercle bacillus, its nature, and the means of transmission are explained in simple, direct terms so that anyone suffering from the disease may understand his problem and meet it intelligently. The importance of constant carefulness and self-control is emphasized repeatedly. Rest, food, and fresh air are named as the three great medicines in the care of tuberculosis. Suggestions are offered for the daily routine of patients, for sleeping out, exercising, and recreation. The danger from coughing and methods whereby a patient may learn to control a cough without drugs are pointed out. Of particular importance are the chapters on the care of children in the homes of the tuberculous and the hygienic care of the patient. The book is so clearly written and its suggestions so practical that its usefulness to tuberculous patients is unquestionable.

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126 Massachusetts Ave., Corner Boylston St., Boston, Massachusetts.

INCOME TAX COMPUTATION.

The computation of his income tax should not be difficult for the professional man, since by education and training he is accustomed to drawing up statements, he has records of transactions involving income, and keeps well in touch with his expenditures. The following information will be helpful in enabling the physician to know just what he is allowed to deduct as professional expense in figuring his net income.

The present Income Tax law requires that returns for 1919 be filed on or before March 15th, 1920, at the office of the Collector of Internal Revenue for the district in which the taxpayer lives. At least one-quarter of the tax due must accompany the return. An unmarried person must file a return if his or her net income was $1,000 or over; and a married person living with wife (or husband) must file if their joint net income was $2,000 or over. A widow or widower, or a married person living apart from wife (or husband) is classed as a single person. The requirement to file a Federal Income Tax return is not contingent upon there being a tax due.

Form 1040 A is used for net income of not more than $5,000; Form 1040 for net income over $5,000. Instructions and a working sheet accompany each return form. Every firm of professional men operating as a corporation must make an annual return of net income on Form 1120; if operating as a partnership, a return of Form 1065 must be filed. An individual's gross income from a profession includes all compensation for his services.

Where services are paid for with something other than money, the fair market value of the thing taken in payment is the amount to be included as income. If the services were rendered at a stipulated price, in the absence of evidence to the contrary such price will be presumed to be the fair value of the compensation received. In the case of a salary received, this should be shown separately, in Block B, of the return. Many professional men and women—lawyers, medical examiners, teachers, accountants, etc.,—are officers or employees of a State, or a political sub-division of a State, such as city, town or county. Their salaries or wages as such officers or employees are exempt from the Federal Income Tax. The exemption also applies to fees received by notaries public commissioned by State and also the commissions of receivers appointed by State courts. As to fees for services to clients and patients, these should be included in the gross income for the taxable year in which they are received, unless they are included when they accrue to him in accordance with an approved method of accounting followed by him.

A professional man may make his return on the basis of cash intake and actual expenditures for the year. It should be noticed that a taxpayer is deemed to have received income which has been credited to or set apart for him without restriction. A more exact and equitable method of figuring net income is on the "accrual basis." This means a computation on the basis of income earned and expenses incurred, whether paid or not, that actually pertain to the taxable year, excluding income earned and expenses incurred in previous or succeeding years. A professional man who keeps books of account should make returns by this method, if his accounting method is one generally employed, and shows a correct net income.

A professional man may claim as deductions the cost of supplies used by him in the practice of his profession, expenses paid in the operation and repair of an automobile used in making professional calls, dues to professional societies, and subscriptions to professional journals, the rent paid for office rooms, the expense of the fuel, light, water, telephone, etc., used in such offices, and the hire of office assistants. Amounts expended for books, furniture and professional instruments and equipment of a permanent character are not allowable as deductions. In the deductions from gross income, the law specifically bars personal living or family expenses. In the case of a professional man who has a regular place of business and who rents a residence, but incidentally receives there clients, patients or callers in connection with his professional work, no part of the rent at his home is deductible. If, however, he uses part of the house for his office, such portion of the rent as is properly attributable to such office is deductible.

The uncollectible bills of professional men, particularly doctors, dentists, and lawyers, have a very important bearing on the net earnings for each year. The principal point in connection with such accounts made in Income Tax procedure is that there can be no allowance for such debts in returns figured on the "cash basis." That is, a person who has been making his annual returns on the basis of cash received and actual cash expenditures each year has never shown as income his accounts with patients or clients, and is not entitled, therefore, to take them out of income. On the other hand, a person who annually figured his gross income on the "accrual basis," that is, included his cash receipts and charges against patients and clients for all of his services performed during each year, is entitled to a deduction for "bad debts" covering such accounts as he ascertained during the year were uncollectible and charged off on his books. An account merely written down or a debt known to be worthless prior to the beginning of the taxable year is not a proper item for deduction.

A reasonable allowance for the wearing out and obsolescence of instruments and equipment is allowed. The proper allowance is that amount which should be set aside for the taxable year in accordance with a consistent plan by which the total of such amounts for the useful life of the property will suffice, with the salvage or scrap value, at the end of such useful life, to provide in place of the property its cost or its value as of March 1, 1913, if acquired by the taxpayer before that date. When through some new invention, or radical change in methods, or similar circumstance the usefulness in his profession of some or all of his instruments or other equipment is suddenly terminated, so that he discards such assets permanently from use, he may claim as a loss in that year the difference between the cost (reduced by reasonable adjustment for wear and tear, which it has undergone, and its salvage value. If the apparatus was owned prior to March 1, 1913, its fair market value on that date should be considered, instead of its cost, in figuring obsolescence. The deduction is allowed by law, but the taxpayer must be able to substantiate any claim made on this basis.

POSTGRADUATE MEDICAL INSTRUCTION AT THE UNIVERSITY OF WISCONSIN.

In a recent issue of the Journal we commented editorially on the postgraduate medical courses of Harvard University given at Springfield and Worcester, Massachusetts. This excellent policy of making advanced medical instruction more easily available to physicians has been adopted by a number of institutions throughout the country. Our attention has been called recently to the Department of Medical Extension of the University of Wisconsin, which offers for the fourth year during 1919-1920 postgraduate medical instruction. The purpose of these courses is to provide for physicians practical demonstrations of the newer methods of diagnosing and treating disease. Clinics are held at a conveniently located hospital, illustrated lectures are given, and there is offered an opportunity for consultations with specialists. By the coöperation of local physicians and the chief of the organization, arrangements may be made for a single clinic and lecture or for a series of weekly, bi-weekly, or monthly clinics and lectures. In order to meet the expense of conducting the courses, a small fee is required of physicians enrolling for the course, and a small appropriation has been made by the state legislature. Courses, consisting of one clinic and one lecture, are offered in various departments of medicine: internal medicine, pediatrics, dermatology, and syphilis, neurology, and psychiatry, genito-urinary diseases, orthopedics, laboratory diagnosis, diseases of the eye, diseases of the ear, nose and throat, roentgenology, obstetrics, and gynecology. This method of extending advanced medical instruction has been commended and found helpful by a large number of physicians.

◆

The Massachusetts Medical Society.

REPORT OF JOINT COMMITTEE ON STATE AND NATIONAL LEGISLATION.

The Joint Committee on State and National Legislation of the Massachnetts Medical Society and the Massachusetts Homeopathic Medical Society report the following matters of general interest before the Legislature:

The State Department of Health has presented to the Legislature nine recommendations for legislation (House 199).

The first deals with the appointment of school nurses in cities and towns. House 200 requires the appointment of one or more school nurses in addition to the appointment at present required of one or more school physicians in every city or town. The bill which has been referred to the Committee on Education is as follows: "The school committee of every city and town in the commonwealth shall appoint one or more school physicians and nurses, and shall assign one of each to each school in its city or town, and shall provide them with all proper facilities for the performance of their duties as prescribed in this act; and shall assign one or more physicians to perform the duty of examining children who apply for health certificates in accordance with this act: *provided, however*, that in cities wherein the board of health is already maintaining or shall hereafter maintain substantially such medical inspection as this act requires, the board of health shall appoint and assign the school physician and school nurse.

Nothing in the bill would prevent two or more small towns employing the same nurse or prevent them from using the same nurse for other forms of public health nursing.

The second deals with cleanliness and sanitary control of food establishments. The bill advocated would control the sanitary conditions of food factories as well as of stores and all places of food distribution.

The third recommendation is that monthly reports of food held in cold storage warehouses be made to the State Department of Health, and that information be given regarding the periods during which any food has been held in cold storage before being brought into the State.

The fourth recommendation is solely of administrative interest.

The fifth recommendation is that a poison label be required on all wood alcohol or denatured alcohol and on external remedies likely to contain methyl alcohol and that drugs intended for internal use be made without methyl alcohol.

The sixth recommendation grants to cities and towns the right to establish centres for preventive health work, such as pre-natal clinics, well-baby clinics, nutrition clinics, as well as dental and nose and throat dispensaries. The legislation suggested places no compulsion on any community. Any money appropriated would be expended under direction of the local Board of Health (House 205).

The seventh recommendation deals with advertisements and sales of remedies for venereal diseases. At present objectionable advertisements cannot be prevented because of the necessity of proving statements they contain to be untrue.

The bill (House 206) has been referred to the Joint Judiciary Committee. The advantages of doing away with the advertisements of quacks who appeal to the credulity and fears of the public are obvious.

The bill is as follows:

Section 1. Whoever publishes, delivers, distributes, or causes or permits to be published, delivered, or distributed, any advertisement relating to the treatment, cure, or mitigation of any venereal disease or of any disease of the sexual organs, shall be punished by a fine of not less than fifty dollars nor more than five hundred dollars or by imprisonment for not more than six months or by both such fine and imprisonment. The provisions of this act shall not apply to the printing or delivering in sealed packages outside of this commonwealth of books, pamphlets, or circulars containing such advertisements, nor to newspapers printed outside of this commonwealth.

Section 2. The provisions of this act shall not apply to any matter relating to venereal diseases or to diseases of the sexual organs published, delivered, or distributed by state, federal or municipal health authorities.

The eighth recommendation is for an increase in the salaries of the district health officers to a maximum of $4800 and at the option of the commissioner a decrease in their number from eight to six. Under present conditions desirable candidates are not attached and present officers are tempted to other states.

The ninth recommendation is one concerned with administration.

The Board of Registration in Medicine present House Bill 109 which has been referred to the committee on public health. It provides for the Limited Registration of Internes and Medical Officers in State, Municipal, and Charitable Institutions. The Board of Registration states the need of legislation in House 108 as follows:

Several States have adopted the custom of granting limited registration to physicians temporarily residing therein, for the accommodation of applicants who might otherwise have to wait some months for an examination. In this Commonwealth, however, examinations are conducted so often that there seems to be no urgent need of limited registration except for hospital officers. Hospital organizations require resident practitioners able to carry on the functions of physicians during their term of appointment, and yet some of these house officers do not expect to remain in this Commonwealth beyond their term of hospital service.

It also happens that it is necessary to install practitioners from other States in our State institutions to fill vacancies, and there has been a reasonable demand for emergency registration to physicians to meet these needs, for it might happen that an appointee would be in danger of unintentional violation of law.

The Board therefore recommends the passage of legislation which will relieve this situation, and presents the accompanying bill."

The bill which has been approved by the Joint Committee on Legislation is as follows:

Section 1. An applicant for limited registration under this act, who shall furnish the board of registration in medicine with satisfactory proof that he is twenty-one years of age or over and of good moral character, and that he has creditably completed not less than three and one half years of study in a legally chartered medical school in good standing which has the power to grant degrees in medicine, and that he has been granted an appointment to the position of an interne or medical officer in a hospital or institution maintained by this Commonwealth, or a municipality thereof, or in a hospital incorporated under the laws of this Commonwealth may, upon the payment of a fee of five dollars, be registered by the board of registration in medicine, as a hospital medical officer for such time as may be prescribed by the said board, but such limited registration shall only entitle the said applicant to practice medicine in the hospital or institution designated on his certificate of limited registration, and under the regulations provided by such hospital or institution.

Section 2. Nothing in this act shall be construed to conflict with or repeal the requirements and regulations of chapter seventy-six of the Revised Laws and amendments thereto.

Section 3. This act shall take effect upon its passage.

House Bill 233 has already been brought to the attention of readers of the Journal. It will be advocated by the Committee. It is as follows:

Section 6. A minor under fourteen years of age who has not been vaccinated shall not be admitted to a public or private school except upon presentation of a certificate signed by a registered physician that the physician has, at the time of giving the certificate, personally examined the child and that he is of the opinion that the physical condition of the minor under fourteen years of age is such that his health will be endangered by vaccination. The said certificate shall state the reasons for the opinion of the physician who signs it, and shall be valid only for one year from the date thereof. A minor under fourteen years of age who is a member of a household in which a person is ill with smallpox, diphtheria, scarlet fever, measles, or any other infectious or contagious disease declared by the department of public health to be dangerous to the public health or of a household exposed to such contagion from another household as aforesaid, shall not attend any public or private school during such illness until the teacher of the school has been furnished with a certificate from the board of health of the city or town, or from the attending physisian of such person, stating that danger of conveying disease by the child has passed.

Section 2. This act shall not be construed to affect the rights of any foreigner admitted to this country under treaty stipulations which are inconsistent herewith.

Senate Bill 32 accompanying the petition of John J. Mahoney relative to the duties of school physicians adds the following clause:

"Every such physician shall, at the request of the teacher, parent, guardian, or next friend of a child examined by him, prescribe in writing for such child such medicine or treatment as the health and welfare of the child may in his judgment require."

Section 2 would then read as follows:

> Every school physician shall make a prompt examination and diagnosis of all children referred to him as hereinafter provided, and such further examination of teachers, janitors and school buildings as in his opinion the protection of the health of the pupils may require. Every such physician shall, at the request of the teacher, parent, guardian or next friend of a child examined by him, prescribe in writing for such child such medicine or treatment as the health and welfare of the child may in his judgment require. Every school physician who is assigned to perform the duty of examining children who apply for health certificates shall make a prompt examination of every child who wishes to obtain an age and schooling certificate, as provided in section sixty of chapter five hundred and fourteen of the acts of the year nineteen hundred and nine, and who presents to said physician an employment ticket, as provided in said section, and the physician shall certify in writing whether or not in his opinion such child is in sufficiently sound health and physically able to perform the work which the child intends to do.

This would at once change the entire status of the school physician. Instead of simply detecting and reporting to the parents conditions which in his judgment tended to impair the health of a child, he might be called upon, with no knowledge whatever of family or previous history, to treat the child. He might institute treatment which would be contrary to the best judgment of the family physician, who knew all the facts which the school physician could not learn.

The dangers involved in allowing a teacher to request a physician to treat a child without the knowledge and consent of a parent are too obvious to require notice.

This bill has been referred to the Committee on Education.

HAMPSHIRE DISTRICT MEDICAL SOCIETY.

A special meeting of the Hampshire District Medical Society was held at Boyden's Restaurant, Northampton, on January 14, at 11.30 A.M.

Dr. Frederick Bryant of Worcester gave a lecture on "Radium and Malignancy" or "The Cancer Problem," which was illustrated by lantern slides showing various cases, and the process of obtaining radium from the ore. He strongly emphasized early treatment of cancer, and mentioned other conditions in which radium therapy was useful. Tubes of radium were demonstrated and their emanations described.

The meeting adjourned at 1 P.M. for lunch.

E. E. Thomas, *Secretary.*

NEWS ITEMS.

Dr. E. H. Hughes, who has been practising temporarily in Northampton since his return from France after having two years' service in the Army, has moved to Turners Falls, where he intends to settle.

Dr. W. J. Collins has resigned from the staff of the Dickinson Hospital. Dr. Collins has served the hospital for 13 years, during which time he has devoted his attention to internal medicine and laboratory diagnosis.

Dr. and Mrs. J. D. Collins leave Northampton on February 1, for Arizona and plan to make an extended trip through the Southwest, returning about April 1.

Correspondence.

MATERNITY BENEFITS.

Everett, Mass.

Mr. Editor:—

To my mind it is unfortunate that in the consideration of many proposed welfare movements requiring medical service, the medical profession is often placed unfairly on the defensive and its members are asked to administer a remedy which they have not chosen, and often cannot approve, to relieve a condition diagnosed by those whose actual knowledge of the past, present, and future needs of human beings is often less than their own.

I think most physicians will agree that there are many, if not a large number, of mothers who do not receive the needed prenatal care and advice or the best of care during and following confinement and convalescence.

There is likely to be some difference of opinion between the M.D.'s and the Ph.D.'s as to the relative degree of responsibility for this condition, attributed to present industrial conditions, to the failure of one or both parents to measure up to a grown-up standard of physical, mental and moral efficiency, to ignorance, to unavoidable misfortune, or to the failure of the medical profession, either as individuals or as a class, to meet the full requirements.

When social insurance was debated at the State House, the medical plea was for delay until the subject received further study. Has any concerted effort been made to study this question by a determination of actual conditions so far as it is practicable to do so?

The criticism was made at the hearings that the medical profession offered no constructive plan for remedying bad health conditions assumed to exist.

(See Senate Doc. No. 244, Rep. Com. on Social Insurance, Jan. 15, 1918, page 57, line 6.) The fundamental basis for advocating health insurance was that the workers did not earn enough to pay for needed medical care at present rates, forgetting that the net return to the average worker, on the proponents' own estimate of cost, would be only about $1.00 per month, while, at retail rates, the average user of alcohol spent in Massachusetts $5.00 monthly. Health insurance was advocated by the A. A. L. L. on an economic basis, while I suppose that maternity care is advocated on the basis of child conservation.

It is, I think, common medical observation that, barring accidents or unavoidable misfortune, the few weeks' care before and following confinement is only a very small part of the burden required for the proper upbuilding of the child of the mother who requires public help during confinement. When will the necessity for aid end? Just now the state will have something of a problem to enforce prohibition and the suppression of venereal disease. When alcohol and venereal disease are eliminated, I think there will be more independents and less dependents. The state is strongest when it has the largest proportion of self-supporting citizens, able unaided by public help to rear and provide for a family of children.

I can see no hope of socialism turning dependents into independents. Personally, I believe there is a serious problem involving the making of dependents into independents that interests society and that the medical profession is better qualified to determine the underlying causes of dependency than any other group. (Better than the Ph.D.'s.)

There have been several bills in the Legislature recently to extend the scope of the school inspection law, and I believe, with some changes in the present law and its general enforcement, with state supervision and with the coöperation and help of the medical profession generally, it would be possible to collect sufficient data within a few years concerning school children and their home surroundings, that would give a basis for intelligent action based on facts. If intelligently administered and in *exceptional cases* provision given for actual treatment, I think much could be done at a reasonable expense and without any radical legislation.

A health survey taken on a midweek half-holiday, digested and compiled on Thursday and Friday, published on Saturday in the hope that it will be applied over Sunday, and everybody at work and happy on Monday, is not going to cure many human ills.

If the cry of expectant mothers is so clamorous on Beacon Hill that something must be done at once, could not provision be made that the truly needy cases be assisted by the state along the line of the present law for dependent mothers?

G. E. Whitehill, M.D.

A PHYSICIAN NEEDED.

The following letter from the Town Clerk of Washington, Mass., is published in the hope of attracting the attention of some practitioner to the sore need of that town for medical attendance.—*Editor.*

Washington, Mass., Dec. 16, 1919.

Committee on Public Health of the Massachusetts
Medical Society, Boston,

Dear Sirs:—

I am writing your Committee, thinking that the subject may be in line with your duties in regard to the protection of health in the towns of Becket and Washington.

Both towns have been practically without a doctor since last spring, and the nearest doctors to be had live in Chester or Hinsdale, about eight to ten miles from the center of population in need of attendance.

While the roads were good there was little trouble to get a doctor, either from Chester or Hinsdale, but since the roads became muddy, which they have been for the past three months, it is almost impossible to get any doctor to come out.

There have been several cases in this town lately seriously in need of a physician's care, but none could be got for love, money, or humanity's sake. One old lady was taken with indigestion, in the evening. When the Dalton doctor was called, he could not attend. The Hinsdale doctor could not come. Then they tried two Pittsfield doctors and neither could attend, the result being that the party had to telephone to the son to get a car and bring a doctor if he wanted to see his mother alive, so he routed out Dr. McCay of Dalton, about four o'clock in the morning. When he arrived the lady was almost gone with suffering. Another case in the same neighborhood was taken sick with the same result, that no doctor would attend. If the patient could be brought to Pittsfield to the hospital they would attend to her. They tried to get an automobile to take her. One party said his car could not go over the mountain and another asked twelve dollars for six miles and return to Pittsfield. Finally, an easy-riding buggy was secured and the lady conveyed to the hospital under severe suffering.

The above is a true illustration of conditions existing in the outlying districts. Of course those living in villages near a railway station have no difficulty, as a physician can be had by train almost anytime. Before the advent of the automobile there was always one doctor, sometimes two, in Becket Village and one could generally be got at any time, even in the worst of weather. I had occasion to call one in a case of typhoid fever when the temperature rose to 106°. Then the doctor drove to within a mile of my house and walked the rest of the way through the snow.

I am writing this to see if your Committee cannot do something to induce a doctor to settle in Becket. There has been talk of getting a petition headed by the selectmen and forwarded to the health authorities but none seem to take any action.

We read and hear so much about care of health, sanitation of houses and schools, industrial hygiene, and visiting nurses one would think there is no need for doctors otherwise than for the above and operations in the hospitals, the easiest way to make a living.

As in all other business one would think the doctors were on strike. When we consider the amount of money that has been raised lately for the Red Cross and other Associations, for the assistance of Armenians and such, surely something should be done to relieve circumstances at home. It would be better than nothing if it could be done through a Legislature so that the town or towns, with State assistance, would be compelled to support a doctor according to the district. If something of this sort is not taken in hand we in this locality will have to become Christian Scientists.

Trusting that your committee can do something to relieve the situation, I am,

Very truly yours,
John B. Watson, *Town Clerk*,
Washington.

Note.—Becket had a population of 973 in 1915; Washington had a population of 275 in 1915.

Miscellany.

UNITED STATES CIVIL SERVICE EXAMINATION.

Physician, Panama Canal Service.—The United States Civil Service Commission announces an open competitive examination for physician on February 18, and March 17, 1920. Vacancies in the Panama

Canal Service at the salaries indicated, and in positions requiring similar qualifications, at these or higher or lower salaries, will be filled from this examination, unless it is found in the interest of the service to fill any vacancy by reinstatement, transfer or promotion.

The entrance salary is $200 a month; promotion may be made to $225, $250, $275, $300, and higher rates for special positions.

Both men and women, if qualified, may enter this examination, but appointing officers have the legal right to specify the sex desired in requesting certification of eligibles. For the Panama Canal Service male eligibles are desired.

Applicants must be unmarried; must have graduated from a recognized medical school whose graduates are eligible for commission in the United States Army; and must have had at least one year's post-graduate hospital experience.

Statements as to training and experience are accepted subject to verification.

Applicants must have reached their twenty-second but not their thirty-first birthday on the date of the examination. Age limits do not apply to persons entitled to preference because of military or naval service.

Applicants must submit to the examiner on the day of the examination their photographs, taken within two years, securely pasted in the space provided on the admission cards sent them after their applications are filed. Proofs or group photographs will not be accepted. Photographs will not be returned to applicants.

Before being permitted to sail for the Isthmus, appointees must undergo a rigid physical examination by a designated physician after the appointment has been actually issued. There will be no charge for this examination, but the appointee must pay his transportation to the place of examination. The official physicians are located at the ports of departure and in a number of the large cities throughout the United States.

This examination is open to all citizens of the United States who meet the requirements.

Applicants should at once apply for Form 1312, stating the title of the examination desired, to the Civil Service Commission, Washington, D.C. Applications should be properly executed, including the medical certificate, but excluding the county officer's certificate, and filed with the Commission at Washington, D. C., in time to arrange for the examination at the place selected by the applicant.

The exact title of the examination should be stated in answer to Question 1 on the application form.

Applicants entitled to preference should *attach to their applications* their original discharge, or a photostat copy, or certified copy thereof, or their official record of service, which will be returned after inspection by the Commission.

NOTICES.

Boston City Hospital.—A clinical staff meeting will be held in the Cheever Surgical Amphitheatre, Boston City Hospital, February 12, at 8 p.m., with the following program:

Demonstration of cases.

"Malnutrition in Children, with Special Reference to the Out-Patient Department," Dr. W. R. P. Emerson.

Discussion by Dr. John L. Morse, Dr. E. N. Libby, and Dr. H. Arnold.

Medical students and physicians are cordially invited.

H. A. Nissen, M.D., *Secretary.*

CITY OF BOSTON HEALTH DEPARTMENT.

Hospital and Ambulance Service for Influenza and Pneumonia Cases.

To Physicians and to Managers of Hospitals.

Hospital and Ambulance Service to be Conserved.

The committee appointed to provide hospital accommodations for patients suffering from influenza and pneumonia has recommended to the several hospitals that beds be made available for such cases by limiting the admission of other medical patients and of surgical patients to emergency cases; and that physicians limit their applications for hospital accommodations for patients suffering from influenza and pneumonia to those who cannot receive adequate care and treatment at home.

I am bringing this recommendation to the attention of the medical profession of Boston and ask the fullest possible coöperation in this matter.

How to Obtain Hospital Accommodations.

In order to facilitate the procuring of hospital accommodations for influenza and pneumonia patients in actual need of such accommodations, a Hospital Service Bureau has been established in the Health Department. Arrangements for hospital care can be most expeditiously made through that Bureau, Room 110 City Hall Annex, telephone Fort Hill 5100, where a register of available beds in the various hospitals is kept and from which patients are now being assigned. This Bureau is open from 8 o'clock a.m. until 11 o'clock p.m. daily, but should circumstances seem to make that course necessary, it will be kept open throughout the night.

An ambulance service is operating in connection with this Bureau and the speedy removal of patients in appropriate cases is thus assured.

William C. Woodward, *Health Commissioner.*

SOCIETY NOTICES.

The Massachusetts Therapeutic Massage Association.—The next meeting will be held at the Hotel Brunswick, Venetian Room, at 7.45 p.m., on Tuesday, February 17. Trustees meet at 7.30.

Dr. Howard Moore, orthopedic surgeon, has kindly consented to talk to the Society on "Massage for Orthopedic Cases."

Members of the medical profession invited.

Douglas Graham, M.D., *President,*
Agnes J. Kerr, *Secretary.*

Suffolk District Medical Society, Surgical Section.—The next meeting of the Surgical Section, Suffolk District Medical Society, will be held on February 18, 1920, at 8.15 p.m., at the Boston Medical Library. Dr. John A. Hartwell, Clinical Professor of Surgery, Cornell University Medical College, and Director of Surgery, Bellevue Hospital, will present a paper. Subject, "Abscess of the Lung." A discussion will follow the reading of the paper. It is hoped that all those present will participate.

Richard H. Miller, *Secretary.*

RECENT DEATHS.

Dr. James Henry Breen died at his home in Hudson, Massachusetts, November 3, 1919, aged 41 years. He was a graduate of the Tufts College Medical School in 1906, and was a Fellow of the Massachusetts Medical Society.

Charles Albert Church, M.D., of Millbury, a Fellow of the Massachusetts Medical Society, was killed at a railway crossing January 13, 1920. He was a graduate of the Medical Department of the University of Vermont in 1884 and was 60 years old. He settled in Millbury in 1895, joined The State Medical Society and later served it as councilor.

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BODILY MECHANICS AND NUTRITION*

By Lloyd T. Brown, M.D., F.A.C.S., Boston.

It is well recognized that fatigue, as evidenced by a child's becoming all to easily overtired, is one of the most important factors to be dealt with in the undernourished child. With this fatigue there may come as a group or singly a multitude of other symptoms. The child may have a capricious appetite, at times eating very little and at other times inordinately. It is often very difficult to give a well regulated diet because the child will not eat at the proper times and seems to eat best in those periods between meals.

When these children have played too hard or have become nervously over-excited, which seems to happen very easily, what little desire for food there was is lost or, if food is taken, the child may have so-called indigestion attacks associated with pain or vomiting and, in extreme cases, may show all the signs of acute vasomotor collapse or shock. In these cases oftentimes no other cause can be found than the overtire or nervous excitement.

Associated with the difficulty in feeding there is usually found a more or less obstinate constipation and all the symptoms which go with this. These children are subject to colds and oftentimes catch them without any exposure; colds which can be stopped by thorough catharsis.

Perhaps the most difficult thing from the parents' point of view is the disposition of the child. It is very common to consider these children as the nastiest tempered, worst disposed kids that we run up against. They have all the naughtiness of the healthy, normal child plus the tantrums and unreasonable crying spells of the incorrigible.

The physical examination of such children, between attacks, is essentially negative. They are usually delicate and undernourished. The black lines or shadows under the eyes, which are very marked at the time of the attack, are always present to a greater or less degree. The nose and throat condition may or may not be important.

However, if when the examination is made, the child is stripped so that the entire body can be seen from the front, back and side, there are certain points that are very evident. It is these points and the treatment of them that concerns this paper.

Leaving aside for the moment the question of whether the use of the body in bad mechanical adjustment has any effect on the functions of the body, let us see if there is any reasonable and easy way by which we can judge what is good and what is bad mechanical use. You may notice that I do not use the term posture. The reason is that posture is too loose a term and means a different thing to every one who uses it.

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* Read before the New England Pediatric Society, December 12, 1919.

Realizing the differences of opinion and the difficulties of judging good or bad human mechanics, three years ago over 700 so-called normal men of the ages 16-22 were examined and tracings were taken of each one. These tracings were compared and were divided into four groups according to the variations which were found. An examination and comparison of these four groups showed certain points of difference which are perfectly constant.

In this chart (Fig. I) you can see these points.

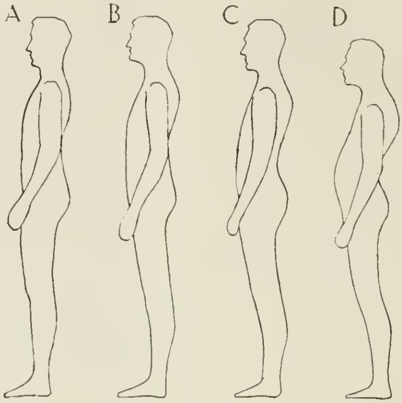

Figure I.

Group A 7.5%

Good Mechanical Use of the Human Body.

1. Head straight above chest, hips, and feet.
2. Chest up and forward.
3. Abdomen in or flat.
4. Back usual curves not exaggerated.

Group B 12.5%

Fairly Good Mechanical Use of the Human Body. Note changes from Group A.

1. Head too far forward.
2. Chest not so well up or forward.
3. Abdomen very little change.
4. Back very little change.

Group C 55%

Bad Mechanical Use of the Body. Note changes from Group A.

1. Head forward of chest.
2. Chest flat.
3. Abdomen relaxed and forward.
4. Back curves are exaggerated.

Group D 25%

Very Bad Mechanical Use of the Body. Note changes from Group A.

1. Head still farther forward.
2. Chest still flatter and farther back.
3. Abdomen completely relaxed, "Slouchy."
4. Back all curves exaggerated to the extreme.

In the group marked A, which is called Good Mechanical Use of the Human Body we find: (1) the head is straight above the chest, hips and feet; (2) the chest is up and forward; (3) abdomen is in or flat; (4) back—usual curves are not exaggerated.

In the next group, B, called Fairly Good Mechanical Use of the Body, there are a few slight changes: (1) Head is too far forward; (2) chest is not so well up or forward; (3) abdomen shows very little change; (4) back shows very little change. Anatomically and mechanically the chest must become flat and not be so well up and forward when the head goes forward because of the attachment of the scaleni and the sterno mastoid muscles to the chest and the cervical spine and skull.

In Group 3, which is called Bad Mechanical Use of the Body, the changes are more marked. (1) Head is forward of the chest; (2) chest is flat; (3) abdomen is relaxed and forward of the chest; (4) back curves are exaggerated.

In the last group, D, Very Bad Mechanical Use of the Body, these four points are exaggerated to the extreme.

If we are to consider the normal, that condition which is found in the average or the great majority of a large group of cases, and if we believe that this normal or average is the correct or best condition, then we are led to think that the C position is the normal or best one, as 55% of the men were of this group. The D group is next, as 25% are such. The B group, third, as 12.5%, and the A group the worst at 7.5%.

In order to find out which groups, the A and B or the C and D, gave a story of more trouble or sickness in the past, certain questions were asked concerning the past histories of the men. The results of these questions showed in brief that the operation for appendicitis had been done 1½ times as often in the C and D groups as in the A and B groups. That 2½ times as many men had been operated on two or more times in the C and D as in the A and B groups. That three times as many men in the C and D groups showed albuminuria as in the A and B groups. That seven times as many men in the C and D groups as in the A and B groups had backaches. In fact, no man in the A and B group complained of backache.

These figures are suggestive and a glance at some tracings (See Fig. II) of the men overseas who fell down and were unable to stand the strain also seems to point out that the C and D groups, although they are the average or more than the average, are not the normal, if we mean by the normal as near the perfect as possible.

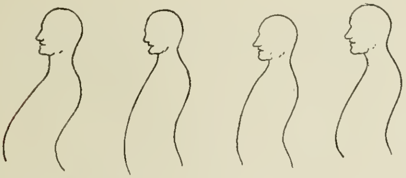

FIG. 2.—Tracing of men in the A. E. F. who were not able to stand up to the regular work and were sent to a Special Training Battalion.

You have seen the pictures of the children in Dr. Emerson's nutrition clinic and here are a few more which were not from clinics but from well-to-do families.

Compare these figures to the diagram (Fig. I) and notice the four points: (1) The position of the head; (2 and 3) the shape of the chest and the abdomen and the relation of each to the other; and (4) the curves of the back. These make up the picture which we all recognize as fatigue.

The treatment of such children may, of course, be very simple if it is aimed only at relieving an acute condition. One change in the usual daily routine may be all that is necessary. This may be accomplished by a better regulation of the diet; by more attention to the bowels; by removal of tonsils or adenoids or other obstructions to breathing; by correcting faulty vision or eye strain or by giving the child more periods of rest. In a certain number of cases, however, all of these methods fail to bring results. It is in these cases especially that an appreciation of the principles of bodily mechanics and a knowledge of the ways to improve them may be a very great help to the physician.

The entire treatment from this point of view is based on the idea of giving as much rest as possible to all parts of the body and especially to the thoracic and abdominal viscera. It is, of course, most important that this should be accomplished without keeping the child in bed or lying down much of the time. From a mechanical point of view a child using its body in the D position with the chest so very misshapen must have, to mention only one of the many changes for example, a very marked change in the kind of respiration. The breathing in such a child is usually very shallow and very largely abdominal. From an anatomical point of vew, the act of breathing should be about equally divided between the intercostal muscles and the diaphragm. In such a misshapen chest as this child has, this equal division is seldom found, because the effort necessary to raise the chest at each inspiration is too great. Therefore the diaphragm must take on the work, but the diaphragm also is at a disadvantage in that it does not get its proper support, owing to the relaxed abdominal wall and the misshapen chest.

In this relation a fluoroscopic study of the diaphragm and chest is very interesting. Such a study, when the mechanics of the body is appreciated brings out some very interesting points. It is known, for example, that in the slender type of individual especially, there will be a definite change in the position and the shape of the heart in the lying and standing positions. In the slender individual also the position and the excursion of the diaphragm in the ordinary respiration in its relation to its position in full inspiration and full expiration differs markedly in the lying and standing positions.

It is, however, not so well known, because of the greater difficulties in making such an investigation, that this change is not so marked in a slender individual with good bodily mechanics as it is in one of the D group. In the

D group, which we recognize as that of ptosis, the diaphragm in the neutral or natural standing position is at the same level as or much nearer to the position of full inspiration, which is, of course, its lowest point, than it is in the A group. The excursion of the diaphragm in natural breathing is also much smaller. This, of course, means the ordinary breathing is shallow, a condition which is found clinically.

With these conditions in mind, without mentioning any others, such as may occur with the heart and the abdominal viscera, is it not advisable when we prescribe rest periods to begin these periods by putting the children in a position which will make them not only breathe more correctly but which will put their bodies into as nearly as perfect a mechanical position as possible? Such a position is accomplished by placing the child on a firm bed or couch and putting a pillow under the back so that it forces the ribs into a fully expanded position. Such a position, after a time, becomes very restful. Lying on the face with a pillow under the lower abdomen and hips is another very good position for getting concentrated rest.

How can this rest be accomplished when the child is up and around? It is here we come up against the much debated question of exercises and braces. The tremendous importance of regulating the child's daily routine to within his physical endurance is well known. This, of course, is very necessary. With it should go an attempt to educate and train the child to use its body in better bodily mechanics. Sometimes this can be done by educational exercises alone and at other times it is necessary to help out this education by means of some support. Just what system of educational exercises and just what kind of a support is needed is entirely a matter of personal opinion. The point is, does the education and does the support tend to produce the result of keeping the child from getting into the extreme fatigue position and getting overtired? If they do not do this, then they had better not be given.

From the point of view of bodily mechanics the first essential point of any educational exercise should be to teach the child how to use its body correctly. The child should be shown what the correct use of the body is and when it has accomplished this how to do the ordinary daily tasks, such as walking, sitting, writing, picking up things from the floor, etc., with the body all the time in good mechanical alignment. It should be taught that the correct way is not one single position, but it is a great variety of positions, none of which are exaggerated either in over correction or relaxation. The idea that throwing the shoulders back is the way to get the correct position should be discountenanced, as it is entirely erroneous and leads to a much exaggerated position. If, with this training, the child continues to slump because it is too tired, then a support should be applied; one which will be pliable and will not limit the spinal motions entirely but will tend to keep the child from getting into the extreme positions.

Here are some tracings taken of a patient at the posture clinic of the Massachusetts General Hospital (Fig. III). This tracing shows the lateral view and also the size of the costal angle of the ribs. The inner line is the natural angle; the outer one is the full expansion. There is no difficulty in grouping this child in the D class.

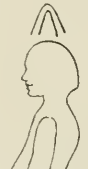
Fig. 3.—Typical example of the mal-nourished child. The lines above the head are tracings of the costal angle taken in the natural standing position and in full expansion of the chest.

The second tracing (Fig. IV) shows what happened after three months' work twice a week at the clinic and daily work at home by herself. Note the change in the shape of the

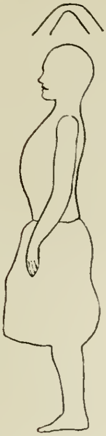

FIG. 4.—Same child as Fig. 3 after three months' educational work. The lines above the head are the rib angles.

abdomen and chest. The second tracing shows a strong properly acting abdominal muscle; the contraction coming entirely below the umbilicus, where nature arranged the muscles to give the greatest strength and support. Note also the change in the costal angle in the two positions, natural and full expansion. The circumference of the chest at the xyphoid was, at the beginning 23½ inches in the natural standing position and in three months was 25 inches. The depth of the chest at the xyphoid was five inches and in three months 6¼ inches. The child's height was 4 feet, 3¾ inches. Her first weight was 57 and last weight 59 pounds. No supports were used. It was possible to educate her to hold herself without the need of them.

In a paper of this length it is possible to mention only very few of the changes which occur with the improvement of bodily mechanics as a whole. What happens to the heart, digestion and other functions as well as to the disposition, cannot be touched upon now other than to say that the improvement is general.

A criticism of such a line of treatment is sometimes made in that it is so slow and takes so long. The only answer to this is that the training of the mind takes years. Some children's minds train more easily than others. The same is true of children's bodies. When we consider that a healthy body tends toward a healthy mind the length of time required for training seems much less important.

An examination such as was made of the Harvard students and the results of putting these D men to hard work in the war shows very definitely that this training should begin with our young children and that it is up to the pediatric and the orthopedic branches of the profession to see that it begins there.

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ILLEGITIMACY—FROM THE STANDPOINT OF THE PHYSICIAN.

By FOSTER S. KELLOGG, M.D., BOSTON.

THE problem of illegitimacy is very large and many sided. It presents itself more or less constantly to the practicing physician both in his capacity as medical adviser and as counsellor to his community.

On the staff of the Florence Crittenton Hospital for several years, I have been brought in contact with illegitimacy in some of its medical and social aspects and have given some thought to the problem. The purpose of this paper is to present, briefly, to the medical profession of this community, certain facts which I have observed during this time and certain ideas, based on these facts, which may be of value to the physician not in contact with this work, but brought face to face with it from time to time, and requiring then some special knowledge to make what, for the person involved, must be a very important decision.

Overlooking these cases in which marriage is advised and carried out, and those cases in which the parents of the woman are content to give her their best aid and comfort by keeping her with them through pregnancy and labor, we come to the larger side of the problem—the girl who must, for one or another obvious reason, be looked after, in whole or in part, by an agency outside of the home.

There are various agencies in this community which make it their sole or part of their business to look after the girl illegitimately pregnant. The detail of these agencies, the minor difference in their purpose, policy, and method need not concern us. They all embody, however, one of two main ideas. One is that, in general, institution care is best for illegitimates; the other, that boarding out in suitable, investigated homes is best—both admit that there are exceptions from each point of view.

These two points of view are well defended in two recent articles in a lay magazine: J. Prentice Murphy in *The Survey,* May 3, 1919, in an article, "Mothers and Mothers," advocates the boarding out plan; and Francis V. Emerson in *The Survey,* August 30, 1919, in an article, "The Place of the Maternity Home," advocates the Maternity Home plan. To anyone particularly interested, these papers will repay reading. It is not my purpose to deal at length with either point of view because I think that both are too narrow to cling to closely and make real progress in a big problem. I think both should be incorporated in a bigger idea.

I have just referred to the bigness of the problem and I would impress this further with a few figures. In a few years prior to the war, from four to five per cent. of all registered births in Boston were illegitimate, in round numbers, 850 births per year. In the same years two and a half per cent. of births registered in the State were registered as illegitimate, over 2,000 births per year. These figures are, of course, smaller than the truth. In a twenty-year generation, then, we have born in this State—and these figures show it is a state-wide problem, not a local one, especially as many of the Boston births are of outside Boston residence—between forty and fifty thousand illegimate children at the least, with the probability that a correct figure is sixty or sixty-five thousand.

These children are economically worth to the State one hundred million dollars plus, if they become good citizens; if they become bad ones, besides the loss of the hundred million they become State expense along the route of insanity, criminality, prostitution, etc., to an unguessable amount—and it is fair to assume that the neglected child, born out of wedlock, has less incentive to go right than any other class. It is as obvious that criminality, prostitution, and venereal disease is recruited from neglected women who have had illegitimate children. The infant mortality rate in 1914 for children born in wedlock was 95. The infant mortality rate in 1914 for children born out of wedlock was 281, three times as great. This means that between one-quarter and one-third of the infants born out of wedlock die before they reach one year of age. This represents so much economic waste. The cause of this high infant mortality rate is separation of baby and mother. The number of deaths under one month, per thousand illegitimate births, was two times as high as legitimate births; at one month it was eight times as high; at two months six times as high. This difference was most noticeable; the death rate from gastrointestinal disease was six times as great in illegitimate as in legitimate babies. These figures show the seriousness of the state-wide problem of illegitimacy.

This problem is now handled in a cumbersome and inefficient manner. I have been told, in conversation with a past member of the State Board of Charities, that in many localities in the State, when a case of illegitimacy was presented to him for placement, there was no suitable place for it available locally, and no agency for the wise selection of a place; and placing them is often a difficult and unsatisfactory problem even for social service agencies in a large city.

There should be a clearing house agency through which all cases of illegitimacy should be passed if they are to be cared for outside the parents' home. The present expensive, and in many cases highly efficient, agencies dealing with illegitimacy should be kept and used to their fullest value under the clearing house.

First let us consider the arguments in favor of the present agencies being used: (1) The practical reason that they exist and would be difficult to get rid of, especially as they believe firmly in themselves; (2) that only in small institutions is it possible to get home atmosphere and personal contact with the Home mother and her assistants; (3) that they are efficient. (a) Of the 847 infants of illegitimate parents born in Boston 49% were born in hospitals, 25% in maternity homes, 3% in the public infirmaries, 23% in private homes. Agency or death records show that 230 of 847, 27%, had died before they were a year old. Of the infants born in private homes 24% were known to have died; of those born in hospitals, 35%; *of those born in maternity homes and the public infirmary, only 17%.* (b) In the maternity home with which I am connected 378 consecutive mothers, from 1914 to 1920, have been confined without a maternal death. In this time twenty-three babies died, a death rate of 6%. Of these ten were premature. One case in the six years died of gastro-intestinal disease. The average stay, postpartum, in the institution was ten weeks, so that while this death rate is not directly comparable it does cover the first two or three months after birth.

The advantage of such Maternity Home care over that in the selected private home is that the woman and baby get two, three, or four months good prenatal care, the best possible hospital care in labor, and the best postpartum care, so that the mother is sent out—and this is fact, not theory, because she can go only on the physician's say that she is fit to work—in such a state of health that she can support her child, and this is, in the last word, what her salvation and economic worth depends on. It takes for a staff to do this properly, first, trained obstetricians and hospital facilities—for we have handled contracted pelvis, adherent placenta, toxemia of pregnancy, hemorrhagic disease of the new born; and in this series we have made our own necessary repair work, cleaned up tubes, and done other necessary pelvic and general surgery; it takes a trained pediatrician for the babies; it takes a dental staff; an internist, a surgeon, an eye, nose, and throat man, and a neurologist as available consultants. It is hard to see how this care can be reproduced for illegitimates in private homes; and I reiterate that while it may be of no importance if a woman with a husband to support her is left in poor shape after childbirth, it is the *sine qua non* for her economic salvation that the mother with no husaband must be discharged in the most perfect health she has ever enjoyed.

I have outlined this in some detail to show not only the high degree of efficiency it is possible to obtain, at least medico-sociologically, in the existing agencies but to back my contention that unless the maternity homes can and will show a good record of accomplishment they should cease to receive support because a staff of high grade can be obtained for all of them.

The question arises why, if maternity homes may be made to give good results, should there be a State clearing house for illegitimacy? Chiefly because there is little intelligence, or rather little knowledge, and that not coördinated, on which to base intelligence, shown in the distribution of types of illegitimacy. The different agencies have each an idea of the type it works best with; a clearing house for distribution purposes would give them that type. But chiefly a clearing house would sort out the mentally deficient. The mentally deficient illegitimate gets in everywhere; she is said to be from 40% to 60% of all illegitimates. She is a menace and a useless expense because caring well for high-grade illegitimates is very expensive. She should be sorted out and put where she has no opportunity to repeat. This a clearing house, with a primary mental examination, would do, and certain existing agencies could handle these cases. Also, take the question of venereal diseased illegitimates. These represent 8% or more of Boston illegitimates. Venereal disease is an accident of luck accompanying illegitimacy. There is no valid reason for making it a distinction against good care—rather the reverse—and yet as matters stand now, the woman unlucky enough to be infected must go to a less desirable place than one who is merely illegitimately pregnant. The clearing house would see to them through some designated, existing agency. There are certain types, as the very young and the very wilful, who are better cared for in private homes than in maternity homes, both for themselves and for the institutions. These the clearing house would see to through agencies already existing which are familiar with this type of case.

This clearing house must of necessity be composed of representatives of each agency in so far as the placing of the case goes in the beginning, except that certain types like the feebleminded and the venereal cases will go direct to designated agencies. Only by this method will you prevent the jealousies of different institutions from coming in.

Placed from this clearing house, the report on each case, followed for one year, if possible, with the end result, must come back from each agency. In five or ten years this accumulated data will have sorted the women into different types and will show what types are best handled in each way. In this way only can progress be made in the study of this great economic problem, and an advance made. Only in this way can we study the prophylaxis of illegitimacy.

CONCLUSIONS.

I believe:

1. That illegitimacy is a big State problem.
2. That the physicians of the State should be familiar at least with the basic facts of the problem.
3. That at present little or no progress is being made with illegitimacy.

4. That the reason for this is lack of an adequate machinery for sorting, distribution, and recording of end results, and for coördinating effort, expense, and information.

5. That such machinery may be obtained from a central clearing house composed of a representative of each agency, under the directorship of a long-time chairman, with the physicians, social workers and clerks necessary.

6. That the cost of such a Board should be supplied by the agencies interested, including the Commonwealth.

7. That in addition to the fact that a clearing center would reserve only the worth-while-working-over woman for the more expensively run agencies, it would be of equal or greater use economically in early segregation and early getting under observation a large number of mentally deficient whose first tangible evidence of their mental condition is pregnancy.

8. That the problem of illegitimacy is big enough to be handled and should be handled as an entity—directed legally, sociologically, and medically—loosely at first until knowledge is accumulated, under one office; that any legislation, as, for example, the proposed Maternity Pension Bill, should not include clauses concerning illegitimacy because it will increase the present too great decentralization and so add to the present confusion.

9. That the medical and social service standing of the agencies be kept to as high a degree of efficiency as possible.

10. That the worst form of care under present conditions for illegitimates—with a few exceptions—is a public lying-in hospital or maternity wards in public or semi-public general hospitals.

11. That the best form of care for low grade illegitimates—with a few exceptions—under present conditions, is the State institution.

12. That the best form of care for high grade illegitimates requiring care outside their own homes—with a few exceptions—under present conditions, is the well equipped, well staffed Maternity Home.

13. That we are forced to believe that, as a general rule, the mother and baby should be kept together for as much of the first year as possible; that adoption, when it is to take place, should, as a rule, be after six months (or better, a year), as a recent law, passed in Maryland, compels, which has greatly reduced illegitimate infant mortality.

REPORT OF NEUROLOGICAL SEQUELAE OF INFLUENZA IN THE BOSTON CITY HOSPITAL NEUROLOGICAL OUT-PATIENT DEPARTMENT FROM JULY, 1918, TO JULY, 1919.

By Mabel D. Ordway, M.D., Boston,

Second Assistant Visiting Physician for Diseases of the Nervous System, Boston City Hospital.

From July, 1918, to July, 1919, a number of neurological conditions were diagnosed as "post influenza." Considering the great number of acute cases in the hospital and community during this period, and the fact that influenza is supposed by some to have a special affinity for the nervous system, the number of cases seems comparatively small; notwithstanding the fact that there were many cases in the early part of the epidemic where probable relationship was overlooked. We have followed thirty-one cases with accuracy sufficient for a preliminary report. The relationship of influenza to the neurological condition in some cases may be questioned, but were the infectious disease diphtheria or typhoid, with a similar history and result, we should have little hesitation in stating the relationship. So we feel justified in considering influenza a predisposing, exciting or, in a few cases, an essential cause of the condition following, at least until it is proved that it is not. In 1890, similar sequelae were reported after the influenza epidemic which was considered by competent observers responsible for the neurological conditions.

Although the conditions are of too varied a character and often too indefinite to allow them to be classified accurately, yet for convenience of discussion we have made the following tentative classification:

- I. Exhaustion (11 cases)
    - 1. Debility or fatigue cases
    - 2. Psychoneuroses
        - *a.* Neurasthenic type
        - *b.* Psychasthenic type.
- II. Neuroses (7 cases)
    - 1. Occupational type (1 case)
    - 2. Chorea (6 cases)
- III. Neuritis (2 cases)
    - 1. Double ulnar (single nerve type)
    - 2. Multiple
- IV. Encephalitis (2 cases)
- V. Hemiplegia (4 cases)

VI. Undetermined relationship (5 cases)
  1. Transverse myelitis (2 cases)
  2. Paralysis agitans (1 case)
  3. Progressive muscular atrophy (1 case)
  4. Post-influenzal athetosis (1 case)

Total number of cases 31

In the exhaustion group among the fatigue or debility cases there was present a tremor of the hand in two cases and of the eyelid in one case; also mild depression and restlessness which diappeared completely under tonic treatment. In two cases of this group there was severe neuralgia; one frontal and one bitemporal, both disappearing completely with rest and supportive treatment. Among the psychoneurotic cases there was one typical neurasthenic and one with hysterical attacks, but there were no marked cases of hysteria. There were three cases of psychasthenia with mild confusion, feelings of inadequacy, temporary memory defect, extreme fatigability, disagreeable dreams; one case with vertigo and fear of insanity.

These cases, in August, 1919, had had periods of improvement, but showed a tendency to relapse upon unusual exertion. The prognosis at this time seemed to compare unfavorably in respect to endurance of the ordinary stress of life with that of most of the organic cases. The ages of the exhaustion group ranged from twenty-two to fifty-one years. There were nine women; six married and three single; and two men both married. The occupations were as follows: three housewives, two domestics, one baker, one boarding-house keeper, one tailor, one rubber worker, one tender of a soda fountain, and one stenographer. All had been in good health before the influenza, except the boarding-house keeper, who had been "slightly nervous."

With regard to the severity and duration of the influenza: five patients had been severely ill; that is, in bed or under convalescent care for four or five weeks; four patients were moderately ill, three in bed two or three days, and one, who later developed psychasthenia had had no care at all. Eight of the eleven patients had had influenza in September or in October, and three in January. Five came to the clinic in January and February, four in March, one in April and one in May. From two to six months after the acute illness, their condition became so annoying as to make them come for treatment, but all had had private treatment and some had been to other hospitals meantime. Three gave a history of having felt perfectly well after the attack, and having been able to work for two or three weeks before the symptoms of exhaustion appeared; one had had several remissions in which he attempted to work, but the usual history was that they had never felt well since the attack.

II.

Among the neuroses there was one in which the occupation seemed to play some part in the localization. The main symptoms were numbness, pins and needles feelings, lifelessness beginning in the left thumb and index finger and extending over the whole arm, later involving the right hand and arm, with no objective changes except a slight weakness of grasp and flexion and extension of the hand. This patient had had two attacks of influenza and was obliged to care for five young children, doing washing, etc., very soon after the acute illness subsided. A month's relief from work made considerable improvement.

There were six cases of chorea. No attempt was made to divide neurotic from Sydenham's chorea, but two cases diagnosed as encephalitis with choreiform symptoms would appear to be more closely related to the Sydenham type. One case was a boy of sixteen, working in a machine shop. All others were school children; four boys and two girls, aged ten to sixteen years. All children were in good health before the attack of influenza. No child had had chorea before, although one had a sister who had chorea and one a sister who was paralyzed. Four children had attacks of influenza of moderate severity, one a very slight attack, and one two very severe attacks. The attacks of influenza occurred in October, November, January and March, and in October, March, April, and July, they first came to the hospital; the choreas beginning from two-week to two-month intervals after the subsidence of the acute symptoms of influenza. Two cases began as neurasthenia, one following two severe attacks of influenza, and the other, a sixteen-year-old boy, was in bed but three days. Both had remissions in which they did fairly well in school and at work, respectively. The boy was able to work in a machine shop for three months before the incoördination of movements and extreme irritability made hospital care necessary. Both cases were diagnosed as encephalitis with choreiform symptoms coming on within two months after the attack, following a neurasthenic condition, and being accompanied or followed by mental symptoms, one of a stuporous and dilapidation nature; the other by extreme irritability and a temporary speech defect. Although fifteen and sixteen years of age, respectively, neither had had chorea before, although one had a sister who was paralyzed and one a sister with severe chorea attacks. The urine, blood, Wassermann and general physical examination were negative; hearts were rapid before treatment but showed no serious involvement. The course: One was entirely relieved in six weeks' complete rest in bed in the hospital; the other, after two weeks in bed and seven weeks in the country was greatly improved mentally, and the tremor remaining was occasional and slight. In August, 1919, five of the six chorea cases were completely relieved, but one child had developed an attack of asthma, as had one of our cases of exhaustion who had had a tremor.

III.

Neuritis. There were two cases closely resembling diphtheritic neuritis except that one was a single nerve type which appears to be less frequent in diphtheria and that the other cleared more fully and in a shorter time than would be expected in so extensive an involvement following a diphtheritic infection.

The first case diagnosed as multiple neuritis was that of an American, a telegraph operator, married, forty-eight years old. He had always been perfectly well until an attack of influenza the last week in March. The attack was not at all severe, although he was in bed five days. There was no fever or a very slight rise in temperature; the nose and throat being the chief seat of the disease, although the cultures for diphtheria bacillus were negative. Immediately following the attack the tips of the fingers and toes were numb. The numbness spread and extended above the elbows and knees. He lost power of coördination so that he was unable to button his clothing or to walk at night. In the right ear there was a roaring sound and partial deafness. He can hear sounds but not distinguish words. His strength has gradually gone. Sensation to touch has partially gone in hands and feet. Pain and temperature sensation are retained. The slightest exertion fatigues the patient. There are no night sweats, but a loss of forty-five pounds of weight during illness. On walking across the room, he feels a sense of constriction, as if the muscles of the calf were an inch shorter than normal.

(Copy from house records): "Well developed, poorly nourished man, lying in bed. Gross coördination fair, pupils regular, equal, react to light and accommodation, mouth negative, chest symmetrical. Lungs—good resonance. Heart—no murmurs, within normal limits. Arms—sensation accurate. Legs—knee-jerks not obtainable; marked Romberg. Staggering gait. Touch sensation present but not acute; can feel firm pressure but not light touch; uncertain between sharp and dull objects. Loss of touch sensation on leg less than on feet and thighs. Urine negative, negative Wassermann, negative gonorrhea. ℞ strych. sulph. gr. 1/60 t.i.d. General treatment."

On June 11, 1919, knee jerks not obtainable, marked Romberg, gait staggering but improved, light touch not felt on tips of fingers and toes, pain and temperature sense normal, pressure felt in areas where light touch is not distinguished. Coördination improved but not perfect. Hearing no better in right ear. No gain or loss in weight. Appetite good. Sleeps well. No pain. Constriction feeling in flexor surface of arms and legs. Very easily fatigued and perspiration excessive on very slight exertion. Hands and feet cold. Report of ear condition: Perforation of septum. ℞ Strych. sulph. gr. 1/60 t.i.d., rest and tonic treatment.

June 25, 1919. After two weeks in the country returned much improved. Paraesthesiae of fingers and toes practically gone. Slight hoarseness and slight deafness remain. Knee jerks not obtained. Romberg now very slight. Gait normal. Sensation much improved; can distinguish sharp from dull point (pain from pressure) and can distinguish very light touch. Perspires easily on slight exertion. He is taking strych. sulph. gr. 1/60 t.i.d. and a general rest in the country where he is to remain two months even though feeling perfectly well. He has gained eight pounds in fourteen days.

September, 1919. The patient returned without a trace of the former condition. His knee jerks were slightly overactive, probably due to the strychnine which he had continued to take. He had resumed his work and said that he never felt better in his life. He was cautioned to be careful of himself, although the six months had made a remarkable apparent cure. In 1892, Dr. J. J. Putnam reported a case following the influenza in many respects closely resembling this one, but only partially recovered after two years.

The comparatively rapid and complete cure with rest, hygiene, and diet suggests some relationship to the nutritional disturbances in animals caused experimentally by withdrawal of the necessary biological food products. When the pathological lesions and the nature of the conditions diagnosed as multiple neuritis and ophthalmia thus produced in the animals have been determined, a biological feeding therapy may be of value in analogous human lesions.

The other case of this group is interesting as illustrative of the selective action of the toxin and the question of occupation as a possible reason for the localization of the involvement. The patient was a student, fifteen years old, who came to the clinic on February 15, 1919, complaining of paralysis of both little fingers. He stated that he had had diphtheria eight years ago with a perfect recovery and he had had his tonsils and adenoids removed two years ago. In August, 1918, he had an attack of influenza and about a month later the little fingers of both hands began to feel numb. There followed weakness and pain radiating up the ulnar side of the forearm to the elbows, weakness of both flexors, minimi digiti, no weakness of interossei, no weakness or flabbiness of hypothenar muscle groups. Diminished pain and touch sensation was limited to the ulnar distribution of both hands but did not include the ring fingers. Pupils, knee jerks and other neurological examination normal. The patient says that the condition is growing worse and that when he uses his fingers a pinching pain goes up his arm. He plays on the piano an hour at a time every day. Electrical reactions, secondary faradism, slow and diminished reaction; galvanism, slow reaction; anodal closing contraction greater than cathodal.

On Feb. 28, 1919, condition was the same with reactions unchanged. R, rest from piano, massage and faradism. On March 17, 1919, motor and sensory movement. Muscles all growing stronger. August 14, 1919: The patient left off all treatment in April on account of his work—tending in a store. He rested his fingers and omitted his usual piano practice. On August 14, he came to the clinic saying that he could not move either of his fingers at all, but although he apparently could not abduct either little finger and could not touch the thumb with either little finger of the same hand, and although the little fingers appeared to be folded over onto the ring fingers, yet there was in reality much power of movement. The cathodal closing contraction was now greater than the anodal, there was a reaction to faradism, the sensation to touch and pain was more acute. He was advised to begin to practise again and to have massage. It was clearly demonstrated to him that he was better and that he could move the fingers.

IV.

Two cases were diagnosed as encephalitis although two of the chorea cases and one case diagnosed as encephalitis with athetoid symptoms might better be included with this group than classified by symptoms as they have been.

These cases were both men; one a chauffeur, one a metal worker; their ages were forty-four and thirty-three years; both were always well before the attack of influenza; x-ray, Wassermann blood and spinal fluid were negative in both; both were severe cases of influenza lasting four weeks and two months respectively. The neurological condition began in both two months after the beginning of the acute attack. Both had dizzy spells; one had unequal pupils, left Babinski, and complained of stuporous feelings, hallucinations or illusions of sight and hearing of a mild form, loss of sexual power, blurring of vision and extreme fatigue. He had a mild degree of optic neuritis—V.O.D. 6/10; V.O.S. 6/13. These eye conditions cleared and fields, fundi, and muscles were later reported normal.

The other case had left peripheral facial paralysis, unsteadiness of station, lateral nystagmus, mild degree of optic neuritis. Oppenheim and Babinski on left, speech defect and a transitory attack of twitching of the right hand.

In August, 1919, both had been well and working regularly for several months. The dizzy spells had ceased in both. Speech was clear in both. Both could see clearly with glasses. The case with left facial paralysis had a tremor of the left facial muscles, but practically no paralysis. His station is steady and there is no nystagmus. The right hand had a fine tremor still, but less marked. At times there are involuntary contractions of the right hand and the left Babinski and Oppenheim are still present.

The interesting factor in these cases is the comparatively good recovery in a comparatively short time. The patients consider themselves well and are very slightly handicapped in pursuit of their previous occupations. It is of interest to follow up these cases and those of the next group with the hope of determining whether or not the apparently quiescent foci afford irritative points for beginnings of chronic organic nervous system diseases or whether they will clear entirely later. It may be possible by carefully following such a series of cases for a period of several years, to gain some knowledge of the part played by latent cord and brain lesions in the origin of organic disease. Some light may also be thrown upon the problem of cord and brain lesions in respect to functional ability. To what extent are organic lesions compatible with the absence of appreciable functional disabilities?

V.

There were four cases of hemiplegia. Three were men, twenty-nine, thirty-two, and sixty years of age. One was a boy of seventeen. Two were married and two single. One was a drill-man, one a carpenter, one a waiter, and one a schoolboy. All gave a history of being well before the influenza. All had very severe attacks of influenza and the hemiplegia appeared during the convalescent period before they were able to be about after the acute illness. The Wassermann was negative in all cases, the urine was negative, and, except in the sixty-year-old man, the age was against an arterio-sclerotic process; so was the blood pressure. One man admitted on the twenty-fifth of November, 1918, was able to work as a waiter by January 3, 1919. He had had disturbance of speech as well as paralysis of face, arm, and leg on the right side. On August 8, 1919, it would not have been possible to tell without an examination of the arm and leg reflexes that there had ever been paralysis. His speech was normal· the facial paralysis cured and the arm and leg as strong as before the illness for all practical purposes.

The boy of seventeen came to the clinic on January sixth. He had increased reflexes, elbow, wrist, knee jerks and ankle jerks, ankle clonus and Babinski on the left side. Pain and touch sensation were diminished on the whole left side, with loss of muscle sense (sense of position), astereognosis, asymbole on the left. Fundi were pale on temporal halves down to lamina cribosa, but not abnormal, no hemianopsia. Ten days later, the Babinski and ankle clonus had disappeared. The left reflexes were hyperactive and some weakness of the left leg and arm remained. A diagnosis of clearing spastic hemiplegia was then made but unfortunately the sensory symptoms are not recorded and it has been impossible to trace the case further as yet.

The man of sixty may have had other factors stimulated or allowed to act by weakened resistance produced by the influenza. He had used alcohol previously and had worked hard all his life, but his Wassermann, blood, and spinal fluid were negative, urine normal, blood pressure 135 systolic and 65 diastolic. Three weeks after the acute attack of influenza, his right hand became weak, and he could not talk. He could not see with his right eye. He came to the hospital in November, 1918, his wife reporting that before the paralysis he had been completely unconscious for three days. On examination, the right pupil was sluggish to light, the right pupil was greater than the left, Babinski and ankle clonus on right side, right arm and wrist reflexes hyperactive; tongue deviates toward right; fine tremor of tongue; movements of facial muscles on right impaired; hearing on both sides impaired; general tremor of body. In August, 1919, he had done his work as a carpenter for five months, although his right hand was spastic and contractures of his flexor muscles made the finer coördinative movements impossible. There was difficulty in movements involving the shoulder girdle, yet the coarser movements were well performed, his speech was normal, his sight was also normal, and there was great general improvement. He felt well except for the localized handicap which was not preventing him from earning his livelihood at his accustomed trade.

VI.

The following series of cases is of interest for the reason that the influenza seems more probably either a coincidence or a precipitating factor, with the exception of the last case reported; which, since the report was written, has reacted in so many respects like the preceding series as to make it appear that it belongs in series IV, as there stated.

In an old case of definite syringomyelia of many years standing, breathing and swallowing difficulties first began after a severe attack of influenza as if a temporarily quiescent process was awakened. One woman of sixty had influenza at Christmas, 1918, with practically no care. The first week in January, she began to develop a characteristic paralysis agitans tremor of the right hand, followed by a tremor of the leg, also a slight tremor of the head. General physical examination: Blood, urine, etc., negative. Blood pressure 130 and 80. Periods of rest relieve the condition only to have it reappear upon exertion. The fact of there being no long period of improvement from January to August is not in accordance with the other so-called sequelae, in practically all of which there was a fair amount of permanent improvement even with no especial care in that period of time. However, the psychoneurotic group showed the same tendency to relapse.

Another case in which it seems probable that the influenza was only a precipitating factor was the following: A man of thirty-eight, a hotel worker, who used his right hand continually in his work, came in May, 1919, to the clinic. He complained of weakness in his right arm, forearm, and hand, beginning seven months previously, after an attack of influenza. He had no pain, but the finer movements of his hand were lost. He could not write at all clearly. Although perfectly well before, he had been always very tired since the attack of influenza and had a feeling of "nervous tension." On physical examination, he was found to be well developed and nourished, gait and station normal, no Romberg, ocular movements normal, no nystagmus, pupils equal and regular, reacting normally to accommodation, sluggish to light. Fundi normal, speech normal, tongue central, fine tremor of tongue, fine tremor of lips, slight weakness of right side of face; palate normal; uvula central; no sensory disturbances made out; knee jerks lively, normal plantars, no Babinski. Muscles of right shoulder, arm, and hand show both spontaneous and artificial fibrillary twitching, small muscles of hand somewhat suggestive of atrophy but are strong. Right grasp, 130; left grasp, 110; fine tremor of both hands; no ataxia; no adiadocokinesia. Heart and Wassermann negative. May 7, 1919, no change in condition. He continues to have the uncomfortable feeling of tension. Referred to eye department May 14; better in dry weather; appetite, bowels, sleep, good; tremor, intermittent. Eye report: "Pupils—reflex normal; slight circular nystagmus at times; muscles and fundi normal; foreign body—o.s.v. 6/16-o.d. 6/12." May 28, 1919, feels more comfortable as it is dry weather. No change in condition. Diagnosis of progressive muscular atrophy (?) was made. As yet it has not been possible to follow him further.

There were two cases diagnosed as transverse myelitis. Both began as complications. One was a little girl of five; the other a boy of fifteen. Both had typical symptoms; the boy never returned and could not be followed. The child showed improvement but weakness and difficulty in walking remained when last seen.

The last case to be reported was diagnosed finally as encephalitis with symptoms of athetosis. It was that of a woman of thirty-five, married, well until December, 1918, when, following an illness called influenza, an attack of acute insanity occurred. Before this condition cleared a general athetosis developed, with a right internal rectus paralysis. This condition, chiefly confined to the right side, remained stationary for several weeks with short periods of partial intermission. The general physical examination, the blood and spinal fluid, Wassermann were negative. The case was variously diagnosed as chorea, hysteria, etc. There was no apparent improvement for several months. Finally, however, the intermissions between the movements grew greater, the internal rectus paralysis cleared, and the gait became steady. About seven months after the original illness ceased the patient was practically well except for a slight unsteadiness of right arm and leg when fatigued.

In no cases of this series is it possible to find a history of any sort of antitoxic treatment. Evidently no series of cases previously treated with serum of any sort in the 1918-1919 epidemic in this locality, and developing sequelae of this character has been reported and is available for comparison.

CONCLUSIONS.

From the cases above cited it is evident that even extreme organic involvement of the central nervous system following influenza has a better prognosis in the majority of cases than similar conditions unassociated with this disease.

I wish to thank Dr. Philip Coombs Knapp, Physician in Chief of the Neurological Service, for permission to report these cases.

Clinical Department.

PLACENTAL TUMOR.

By Reginald Dimock Margeson, M.D., Boston.

The following case is of interest because of its rarity, and the deleterious influence of the tumor at time of labor.

The patient, aged 24, came to me for examination on February 18, 1919. Family history negative. Past history unimportant. Married one year. Menstruation at 15, flowing three or four days regularly every twenty-eight days up to October 27, 1918. Since that time there had been no menstrual flow.

Examination: Patient well developed and nourished; nervous temperament. Heart and lungs negative. Abdominal examination: Slight tenderness over McBurney's Point on deep pressure, but no spasm; otherwise negative. Pelvic measurements: Intercristal 26 cm., interspinous 23 cm., external conjugate 18 cm., transverse diameter of the outlet 10 cm. Vaginal examination: Uterus enlarged to the size of a three and a half months pregnancy, soft, Chadwick's sign. Secretion in both breasts with enlargement of papillae. Blood pressure 110 mm. systolic. Urine: 1018, no albumen, no sugar, acid.

The patient was seen and examined at regular intervals up to the time of labor. Her general condition remained good. She complained of pains throughout the lower abdomen and back, sharp and cutting in character, coming on at irregular intervals. In spite of all treatment these persisted through the entire pregnancy. At no time did any toxic symptoms arise; the blood pressure kept between 110 and 130, the urine remaining normal.

On August 12, at 6 p.m., I was called to see the patient who was having irregular labor pains and a slight staining of bright blood. On abdominal examination, I found the head floating above the pelvic brim and directed toward the right iliac fossa, back apparently on the left, foetal heart regular, rate 140, heard in upper and lower left quadrants. Vaginal examination: No foetal part in the pelvis, cervix not taken up. Patient's general condition good, pulse 90, temperature normal. She was sent to the hospital for observation and a test of labor. At times during the following 24 hours there were good labor pains at irregular intervals, lasting two to three hours. No progress was made, foetus occupying same position, very little cervical dilatation. Caesarean section seemed definitely indicated.

At 6.30 p.m., August 13, the classical abdominal Caesarean section was performed, an 8½-pound female baby was readily delivered, resuscitated without difficulty. In removing the placenta, which was attached posteriorly to the left and rather low, a tumor 10x6x3 cm. somewhat the shape and consistency of the normal spleen, attached to the placenta by a structure similar to the umbilical cord 6 cm. long and overhanging the left pelvic brim, was removed. The pelvis was slightly contracted, foetal head good size; the tumor apparently added sufficient obstruction to prevent engagement of the head, it remaining above the pelvic brim and occupying a position in the right iliac fossa.

The tumor measured 10x6x3 cm., was completely surrounded by amniotic membrane, being attached only to placenta by a structure similar to umbilical cord containing vessels and measuring 6 cm., thus differing from a succinturiata by having no uterine attachment. Unfortunately the specimen was destroyed by mistake before a microscopical examination was made. However, the patient's condition has been excellent and from the clinical picture and macroscopical examination of the tumor it would seem that it was benign and in no way malignant, the tumor macroscopically appearing much like placental tissue with considerable fibrous connective tissue. From what few cases that have been reported this would seem to belong to the group of angiomata, which are further divided by one writer into chorio-angiomata and chorioma angiomatosum, the latter containing much more fibrous tissue than the former and both containing large chorionic cells and dilated vessels.

RUPTURE OF THE PECTORALIS MINOR MUSCLE.

By William Pearce Coues, M.D., Boston.

Rupture of the pectoralis minor muscle is such an unusual injury that the report of the following case seems of interest:

J. S., 21 years of age, a single man, was examined for the Massachusetts Industrial Accident Board, May 29, 1918. While lifting on a tackle and falls with the left arm high in the air, he gave a quick jerk on the rope and felt a sudden severe pain above the nipple of the left breast. At the time he was raising wooden boxes on the tackle, and he estimated that the load was between 800 and 900 pounds. He has complained of pain about the left breast on attempting to use his arm since that time.

Nothing in the previous history was found with any bearing on the present injury, which occurred September 6, 1917.

Examination showed a very well-developed and nourished man, of splendid physique. The general physical examination was negative.

The region of the left breast was distinctly more prominent than the right. There was a diffuse globular swelling under the breast, extending from the anterior border of the axilla to just above the nipple line. The mass was soft, dough-like, and somewhat tender to direct pressure. It was most marked near the axillary line. Its general shape was somewhat that of a cucumber.

Elevation of the shoulder was possible but painful. Adduction of the arm caused distinct pain in the pectoral region. The grip of both hands was equal and strong. No disturbance of sensation of hand, forearm, or shoulder was noted. There was no atrophy. The greater pectoral muscle was very well developed, and seemed to be functionating perfectly well.

The nature of the injury and appearance of the soft tumor-mass in the direct position of the lesser pectoral, would seem to make the diagnosis of this unusual injury fairly certain.

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Book Reviews.

Industrial Medicine and Surgery. By Harry E. Mock, M.D., F.A.C.S., Assistant Professor of Industrial Medicine and Surgery at Rush Medical College. Octavo volume of 846 pages with 210 illustrations. Philadelphia and London: W. B. Saunders Company. 1919. Cloth, $10.00 Net.

An important new textbook dealing with an important rapidly growing branch of medical work. The author presents an extremely wide unusual range of topics in forty-eight chapters under six general headings: I, Industrial Health Service; II, Prevention; III, Industrial Medicine; IV, Industrial Surgery; V, Compensation; Insurance, Medicolegal Phases; VI, Reconstruction.

Technical language has been avoided as far as possible in order to extend its usefulness to the layman,—"to those employers, industrial engineers, social workers, and labor leaders who are honestly striving to improve the condition of those who must produce and provide."

Each chapter covers a topic generally in adequate manner, avoiding too much exhaustiveness, also undesirable brevity.

The volume is of interest to every medical man because it collects the many points of contact conveniently that exist between medicine and industry. Of special importance to the medical profession are chapters on industrial hygiene and health insurance. Legislation in different states and state investigations of health insurance are discussed.

The book indicates the ideal requisites of the industrial medical man; and there is brought to the reader's attention the possible effects of new industrial medical developments on old-fashioned private practice, as well as the influence exerted on medical fees.

Many special scientific subjects are considered, and in doing so the author becomes thoroughly scientific and detailed in his presentations. There are chapters on Epidemiology in Industry; The Tuberculous Employee; Hand Infections; Fractures; Amputations; The Employee's Foot; Health Hazards in Occupations; including discussion of various poisons, occupational intoxications, gases, fumes, dusts.

It is impossible in a short review to mention the complete list of subjects touched upon. There are chapters on Women in Industry; and Human Conservation and Reclamation of the Disabled. Many of the latest ideas involved in the war are mentioned, and there is a résumé of certain features of the 37 Workmen's Compensation Acts in the United States. The author believes that the employees' compensation legislation in this country has advanced industrial medicine and surgery at least a generation.

An exhaustive bibliography and index are included at the end of the volume, well worth anyone's careful reading and thoughtful consideration.

Diseases of Infants and Children. By Henry Dwight Chapin, A.M., M.D., and Godfrey Roger Pisek, M.D., Sc.D. Fourth Revised Edition. New York: William Wood and Company. 1919.

This, the fourth edition, of this well-known work, has been thoroughly revised and brought up to date. A number of new articles have been added on such subjects as acidosis, food allergy and epidemic encephalitis. An especially valuable chapter for the practitioner is that on special examinations. A new table of heights and weights has been added and some of the illustrations improved. The book is, nevertheless, still unsatisfactory in that it is too short. We feel as we did when we reviewed the first edition that "if it was twice as large it would be more than twice as good" and still "regret that the authors, with their wide knowledge of the subject, have not given us a more complete and comprehensive work."

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THE PREVALENCE OF INFLUENZA.

For the past few weeks, reports received by the Public Health Service have indicated the general prevalence of influenza throughout many states in the Union. Among civilians and soldiers alike the malady has been increasing, although most cases are reported to be of a mild form and the death rate is comparatively low. The Senate has appropriated the sum of five hundred thousand dollars to be used in checking the disease.

In Boston, although there has been a large number of cases, they seem to be less virulent than those in the previous epidemic, and the death rate is considerably lower. On January 21, there were reported 11 cases of pneumonia for the preceding twenty-four hours, and seven deaths. During the week ending January 11 there were 40 new cases, and 54 by January 18. On January 24, there were reported 27 new cases in Boston and 84 outside the city; on the corresponding day of last year there were 127 new cases of influenza and 23 deaths. During the week ending January 24 a total number of 174 cases of influenza was reported, with two deaths, and 43 deaths from pneumonia. An investigation of the resources of various committees has been made to determine the doctors, nurses, and supplies which may be available in case of emergency. On January 26, upon the report of an increase to 195 cases of influenza within forty-eight hours, Dr. William C. Woodward called a conference of local relief organizations, including the Instructive District Nursing Association, the Red Cross, the St. Vincent de Paul Association, and the federated Jewish charities, to complete arrangements for combating the disease. It is thought that there probably will not be established any regulations to control the opening and closing hours of stores and street car congestion in the city. Arrangements have been made, however, for the free administration of vaccine by the Massachusetts Homeopathic Hospital as a precautionary measure against the disease.

The number of new cases of influenza and pneumonia reported on January 27 was 184, with two deaths from influenza and 17 from pneumonia. The Red Cross has prepared a list of all private automobiles which may be used in emergency cases, and the District Nursing Association is holding its sixteen stations in readiness to be used as sub-stations of the health department, with means for sending food to families where all the members are ill, or where poverty prevents proper feeding. On January 28, there were reported 343 new cases in Boston, with 5 deaths from influenza and 6 from pneumonia, and 813 cases throughout the state. Returns to the State Department of Health showed the following new cases in the vicinity of Boston: Cambridge, 40; Chelsea, 37; Lynn, 31; Everett, 24; Haverhill, 23; Revere, 15; Rockport, 37; Saugus, 12; Andover, 12; Lowell, 18; Worcester, 18; Somerville, 35; Waltham, 21; Framingham, 11. Dr. Eugene R. Kelly, Commissioner of Public Health of Massachusetts, is reported to have recommended that twenty-five thousand dollars be appropriated by the Legislature to be expended under his direction for emergency measures.

On January 30 reports showed a considerable decrease in the number of new cases both in Boston and throughout the state, the number dropping to 770, of which 276 occurred in Boston; the total number of deaths in Boston was 11, 5 from influenza and 6 from pneumonia. Other cities reported the following number of cases: Pittsfield, 39; Worcester, 37; Somerville, 34; Everett, 31; Revere, 28; Cambridge, 25; Haverhill, 24; Waltham, 23; Newton, 20; Braintree, 14; Lynn, 13; Attleboro, 12; Lowell, 11; Weymouth, 11; Springfield, 10. During the week ending January 10 there were 40 cases of influenza in Massachusetts; the total for the week ending January 30 was 4469, 1089 of which were reported as new cases on January 30. Lobar pneumonia showed an increase also during the month, but at a more moderate rate. Greater Boston has been the chief center of the disease in the state; the Connecticut Valley and Cape Cod sections have had few cases. The total number of cases in Boston has exceeded that of any other community, although Cambridge has been afflicted even more severely in proportion to its population. Worcester, with the third largest total of cases, has suffered in proportion nearly equally with Boston. There have been 1545 cases of the disease in Boston during the month, 212 in Cambridge, and 201 in Worcester. The encouraging feature of the present epidemic is the resulting comparatively low death rate, which is far below that of 1918. The following figures show how rapidly the disease has spread throughout the state during the month of January:

Week ending Jan	10	17	24	31	Total for month
Influenza	40	54	490	4469	5070
Lobar pneumonia	142	145	200	314	350

The following communities have reported many more cases in proportion than has the state as a whole:

Boston	1545
Arlington	42
Attleboro	48
Belmont	49
Braintree	29
Cambridge	212
Chelsea	129
Everett	101
Haverhill	152
Lynn	128
Malden	103
Newton	86
Pittsfield	119
Quincy	89
Rockport	61
Somerville	164
Waltham	164
Wellesley	47
Needham	47
Worcester	201

In New York the epidemic has run a similar course during the last few weeks. On January 21 there were reported 462 new cases of influenza and 230 of lobar pneumonia, with 11 deaths from influenza and 67 from pneumonia. On January 22, there was a notable increase, there being 671 case of influenza. One thousand three hundred and thirty-two new cases of influenza and 403 of pneumonia were reported on January 23, with 23 deaths from influenza and 79 from pneumonia. Arrangements have been made for the sale of whiskey for prescription purposes, as liquor has been requested by a number of physicians in the treatment of pneumonia. An appropriation of eighty thousand dollars has been made by the Board of Estimate to be used for preventing the spread of the disease. Up to January 24, there had been reported in New York 5944 cases of influenza and 2950 of pneumonia, the total deaths from both diseases being 129 and 1024 respectively. A total of 2361 new cases of influenza, with 33 deaths, and 364 of pneumonia, with 11 deaths, were reported on January 24. In order to prevent overcrowding of the city transit lines, changes have been made in the opening and closing hours of stores and theatres. Reports on January 25 show a continued increase, there being 2855 new cases of influenza, with 30 deaths, and 75 deaths from pneumonia. Bebetween January 1 and January 25 there were reported 8799 influenza cases and 3187 of pneumonia, with 159 deaths from the first, and 1099 from the second cause. A decrease to 1712 cases of influenza was reported on January 26, making the month's total to that date 10,511, with new cases of pneumonia amounting to 230, making a total of 3425. A total of 3663 cases of influenza and 420 of pneumonia, with 57 deaths from influenza and 112 from pneumonia showed a considerable increase over the previous day. By January 29, there was a decrease in the number of cases to 4706 of influenza and 6499 of pneumonia, with 100 influenza deaths and 136 deaths from pneumonia. On January 31 there were reported 123 deaths from influenza, of which there were 4895 new cases, and 811 new cases of pneumonia, with 137 deaths. The total number of cases of influenza in New York for the month of January numbered 34,896, and of pneumonia, 6842, with 668 influenza deaths and 1733 from pneumonia.

The figures for the last part of January in Chicago indicate the wide incidence of the disease in that city. On January 21 more than 6000 persons were suffering with influenza, although it appeared in a mild form and the death rate was comparatively low. On January 23 there were reported 2551 new cases of influenza and pneumonia, with 76 deaths. The shortage of trained nurses has made difficult the struggle against the spread of the disease. During the 24 hours ending January 25, there were 1350 new cases of influenza, with 50 deaths, and 267 pneumonia cases, with 51 deaths. Deaths on January 26 totaled 166, 86 from influenza and 80 from pneumonia. There were 1378 new cases of influenza on January 27, with 96 deaths, and 360 pneumonia cases with 91 deaths. Fourteen thousand women trained as nurses by the Red Cross during the war were called upon to aid in checking the epidemic. From the beginning of the outbreak of influenza in Chicago to the end of January there were reported altogether 26,888 cases of influenza and pneumonia, with a total of 1668 deaths.

Reports from other cities in the United States show a similar increase toward the end of January. On January 23 theatres and all places of amusement were closed in Memphis, Tennessee. On January 24, 87 new cases of influenza and 23 of pneumonia were reported from Baltimore, and in Detroit, 760 new cases of influenza. There were 152 new cases in Wyoming, 69 cases with 10 deaths in San Francisco, 242 in Connecticut, and 177 at Richmond, Virginia. Two thousand new cases were reported in Michigan on January 26. On January 27, the total number of cases reported in Illinois had reached 14,805; new cases in Michigan numbered more than 2000; there were 1061 in Milwaukee and 350 in Wyoming. During the week ending January 24, the total number of cases amounted to 27,241, an increase of more than 23,000 over the previous week; deaths from influenza in thirty cities totaled 467, an increase of 396 over the preceding week, while pneumonia deaths were 945, a decrease of 75 from the total of the week before. Reports reaching Washington on January 29 indicated the general increasing spread of the disease throughout twenty-three states and the District of Columbia.

A statement issued on January 20 states that influenza had become epidemic in several army camps, particularly in the Middle West, and that it had appeared also among the American troops in Germany. Epidemics were reported from Camp Grant at Rockford, Illinois, Fort Sheridan, Love Field, Texas, and the Great Lakes Naval Training Station. During the week ending January 9, 163 new cases were reported among the soldiers on the Rhine, with 12 deaths from influenza and six from pneumonia. One hundred and eighteen new cases of influenza, with four deaths, were reported from the Great Lakes Training Station on January 20, bringing the total number of cases under treatment on that date up to 886, including 52 pneumonia cases. A statement issued on January 28 by the War Department showed a high death rate among United States troops in Germany. For the week ending January 16, it was 36.74 per 1000.

In Toronto there were on January 31, 2000 cases of influenza, with a total of 17 deaths. On the Spanish steamer *Reina Victoria Eugenia* arriving at Montevideo from Barcelona, 60 cases were reported on January 29. On the Cunard line steamer *Kaiserin Auguste Victoria*, during her passage from New York to Plymouth, England, there developed 60 cases of influenza and three of pneumonia, resulting in one death. On January 22, there was received in Washington a report of 6000 cases of influenza in Havana, Cuba. On January 29, there were reported from Rome 122 deaths for a three-day period. A cable message from Tokio states that there have been many deaths due to influenza in Japan.

With the beginning of February, the outlook has become more encouraging, as a decline in the incidence of influenza has been reported in several large cities, including Boston, New York, and Chicago. In Boston there were 206 new cases of influenza and 21 of pneumonia, with 1 death from influenza and 14 from pneumonia.

New York reported a decrease both in the new cases and in the number of deaths, there being a decrease of 804 cases of influenza and 146 of pneumonia, with fewer deaths to the number of 19 from influenza and 17 from pneumonia. Conditions are equally encouraging in Chicago, where influenza cases decreased from 860 to 591, pneumonia from 352 to 246, influenza deaths from 122 to 98, and deaths from pneumonia to 75 from 85 on the previous day. It is the opinion of health officials that there is no cause for serious alarm because of the present epidemic, for it now appears to have reached its height, and continues to show itself in a mild form, with a death rate considerably lower than during the epidemic of 1918.

THE USE OF NARCOTIC DRUGS.

The precaution taken by the Bureau of Internal Revenue in providing regulations for the sale and distribution of narcotics is not only a revenue measure, but also serves the purpose of restricting the traffic in such drugs.

Every person who imports, manufactures, produces, compounds, sells, deals in, dispenses, or gives away opium or coca leaves, or any compound, manufacture, salt, derivative or preparation thereof must be registered with the Collector of Internal Revenue, and this includes all physicians who precribe or use narcotics in their practice.

In order to be registered, it was learned at the office of Acting Collector Andrew J. Casey, in the Little Building, Boston, physicians must first show the Federal authorities that they are registered practitioners in Massachusetts. When the certificate or special stamp tax is issued from the collector's office it bears a registry number which identifies the applicant as long as he is registered with the office and which must appear on all his narcotic prescriptions. Without this number druggists will not fill the prescription. The cost of the special tax stamp is $3.00 yearly and the time for registration is June of each year.

When the special tax stamp is issued it is to be posted in a conspicuous place in the physician's office or his place of business. Penalty for failure to comply with this regulation is based on the amount of tax and the cost of prosecution. A force of deputies from Collector Casey's office is continually engaged in visiting physicians, dentists, and druggists to see that the provisions of the narcotic laws are complied with.

With the registration, physicians, if they wish to buy narcotics for their own use or for dispensing to patients, are required to secure the government order blanks which cost them 10 cents for a book of 10. About two books a year are required in an ordinary practice.

Each book, before it leaves the revenue office, is numbered and each original and duplicate order blank is carefully stamped with the name, address, and registry number of the physician to whom issued. These order blanks, according to Chester H. Clark, head of the narcotic department in the revenue office, bear an important part in keeping a check on the traffic in opium and coca leaves. Each order must be written in duplicate, the physician keeping the second copy and the person who fills the order keeping the original. Each is obliged to keep the order for two years. The narcotic inspectors from the revenue office are very careful to see that these records are faithfully kept and where it is found that an order has been filled without the physician keeping the duplicate copy the government is quick to prosecute and heavy penalties are imposed.

Other articles on this subject will be published from time to time in later issues of the Journal.

ENDOWMENT FUND FOR THE TIDE OVER LEAGUE.

The value of occupational therapy during long periods of chronic illness was first tested in Boston a few years ago in the wards of the Massachusetts General Hospital. Its helpfulness in the recovery of patients both in hospitals and without and the encouragement which it gave through long convalescence soon became recognized by Dr. James Marsh Jackson, who finally succeeded in persuading a few friends to support him in the organization of the Tide Over League. This League was incorporated in April, 1919, under the law of Massachusetts, as a charitable corporation, and has given excellent proof of its service to temporary or permanent invalids. The institution was organized for the purpose of giving employment to men and women during a period of convalescence from illness or while temporarily handicapped by some physical infirmity. It is supported entirely by voluntary contributions and from the sale of articles produced by the League.

There are many physical conditions which cannot be relieved immediately either by operation or by other treatment, and a patient can regain health only by gradual steps. Orthopedic cases, heart complications, and nervous breakdowns are cases of this sort and are among those which have been benefited by the help of the Tide Over League. During 1918 there was a daily average of from twenty to twenty-five persons working in the sunny rooms of the League, in addition to a number varying from ten to twenty-five doing work at home. Weaving, rug-making, both woven and crocheted, basketry, leather-work, and embroidery, furnished opportunities for making useful and serviceable articles.

Dr. Jackson recognized the help derived from the occupation of hands and mind; he realized, also, how much the slight financial aid received in return for the articles made very often helped to dispel the worries which accompany and sometimes prolong convalescence. It is hoped that as a memorial to Dr. Jackson a fund may be raised which will be large enough to give adequate support to the work of the Tide Over League. Those who have known Dr. Jackson and have appreciated the excellent service of this organization may wish to join in the endowment of the Tide Over League, with which the name of Dr. Jackson always will be associated. Subscriptions are being received by Mrs. George E. Warren, 148 Beacon Street, Boston.

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COMPENSATION FOR EYE INJURIES.

In another column we print a letter from Dr. Francis D. Donoghue, Medical Adviser of the Industrial Accident Board, who is also Chairman of the Medical Section of the International Association of Industrial Accident Boards and Commissions.

There have been many efforts made to schedulize eye injuries in terms of percentages of loss of vision and payments made upon such schedules. It is perfectly evident that that is at best a makeshift for administrative purposes and is not one which commends itself to the skilled ophthalmologist. Suggestions are now asked for improvement in the Massachusetts law. There are many objections to the attempts being made to make the trained professional men conform to a prescribed table made by laymen and this is true not only from the standpoint of eye injuries but other injuries to the human economy. The medical profession is now given an opportunity to aid in perfecting compensation laws which already are doing such great constructive work.

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MEDICAL NOTES.

Society of American Bacteriologists.—At the recent meeting of the Society of American Bacteriologists in Boston the following officers were elected:

Dr. Charles Krumweide, of the research laboratory of the New York Health Department, president; Dr. F. C. Harrison, president of the MacDonald College in Montreal, vice-president; Dr. A. Parker Hitchens, of Indianapolis, was reëlected secretary-treasurer, and Dr. J. W. M. Bunker was chosen assistant secretary, a new position in the organization. New members of the council are Dr. F. P. Gay, professor of pathology and bacteriology at the University of California, and Dr. C. G. Bull, professor of immunology at the Johns Hopkins School of Hygiene in Baltimore. A committee on national research was created, consisting of all the past presidents, with Dr. Bunker as executive secretary, and Dr. S. C. Prescott, of Boston, as chairman.

Appropriation for Medical Research.—It has been announced that an appropriation of money has been made by the trustees of the American Medical Association in order to promote research in subjects relating to scientific medicine and those of practical interest to the medical profession. The Committee on Scientific Research of the American Medical Association, 535 North Dearborn Street, Chicago, will receive applications for grants until February 1, 1920.

The Award of Medical Degrees by the University of Leeds.—The University of Leeds has conferred on Surgeon General Sir Alfred Keogh and Sir Almroth E. Wright the honorary degree of doctor of science.

Election of Dr. Loevenhart.—At the annual meeting of the Pharmacological Society held in Cleveland recently, Dr. A. S. Loevenhart, professor of pharmacology and toxicology at the University of Wisconsin, was elected president of the society.

Honor for Sir Donald MacAllister.—The cross of the commander of the Legion of Honor has been conferred upon Sir Donald MacAllister, superintendent of the British Medical Council, by President Poincaré.

Scientific Research in Sweden.—It has been announced in the *Journal of the American Medical Association* that on the initiative of Professors Forssner, Forssell, and Holmgren and Dr. Key, of Stockholm, and Professors Quensel and Petrén, of Upsala and Lund, there was held recently a meeting to organize the Svenska Sällskapet for medicinsk forskning in order to promote scientific research in Sweden. Members and officers to the number of one hundred and sixty-nine have been elected already, including a number of prominent laymen, directors of banks, consuls, and others, in addition to the leading professors in the medical sciences. The treasury of the society has received a donation of five thousand crowns from a legacy, and will attempt to provide funds for medical research. In his opening address, Professor Quensel emphasized the fact that new orientations and the planning of new fields of activity have been made necessary by recent world events, and quoted the saying, "If the human race can be perfected, it is in the medical sciences that the means for this must be sought."

Universal Military Training.—A copy of the following statement was sent on Feb. 11 to each Senator and Representative in Congress from Massachusetts.

Acting upon the unanimous request of the Council of the Massachusetts Medical Society, the Joint Committee on Legislation of that Society and of the Massachusetts Homeopathic Medical Society last evening considered and unanimously endorsed the medical aspects of the bill now before Congress providing for universal military training. It is the unanimous opinion of the Committee, which represents over four thousand physicians of Massachusetts, that this measure offers tremendous opportunities for good. The detection of diseases and defects through physical examination, their relief by appropriate measures, and the betterment of health and physique through out of door life and exercise, must inevitably improve greatly the physical condition of the young men throughout the country.

Sturdy Bodies for Working Children.—The Children's Bureau of the United States Department of Labor has called attention to the following facts concerning working children:

The imperative need of physical tests for children about to enter employment and of continuous supervision over the health of children at work has received national recognition in the organization by the Children's Bureau of the United States Department of Labor of a permanent committee to determine physical standards for working children.

Little has been done up to the present time in the United States to prevent children from going into work for which they are physically unfit, and practically no study has been made of the effects of early labor on the growth of the body. Yet the children who begin work between the ages of 14 and 18, and in many instances as early as 12, or even younger, are the children of least resistance in the community. They are in general the children of the poor, and in consequence, are likely to be the ill-nourished, the undersized, and the anemic. Already handicapped, their growing bodies can put up no resistance to the exacting demands of industry on muscle and nerves. During these maturing years they are peculiarly liable to injury from overstrain and peculiarly sensitive to all sorts of industrial hazards.

A great deal of the work done by children is, moreover, unfit for them. It often involves too much sitting, or too much standing, the carrying of weights beyond the child's strength, the overexercising of one set of muscles at the expense of another, and, in certain occupations, the loss of sleep. Foreign investigations have shown that the sickness rate among juvenile laborers is appalling, especially during the second year of working life, when the injurious effects of early labor upon already undeveloped bodies have had time to make themselves felt.

A "Physical minimum" for children entering employment was provided in the standards adopted by the Children's Bureau Conferences held in Washington and other large cities in May and June, 1919. This minimum declared that "A child shall not be allowed to go to work until he has had a physical examination by a public-school physician or other medical officer especially appointed for that purpose by the agency charged with the enforcement of the law, and has been found to be of normal development for a child of his age and physically fit for the work at which he is to be employed." It provided also that "There shall be an annual physical examination of all working children who are under 18 years of age."

But what constitutes "normal development" for boys and girls of different ages, and what indicates that a child is "physically fit" for the employment which he is about to enter? Only through exact observation and measurements can it be demonstrated that a child is unfit for certain kinds of work, or that too early and too exacting labor is endangering his physical development. The standards to be applied constitute a vitally important part of the problem of child labor.

The committee appointed by the Children's Bureau will undertake to provide these standards. The committee consists of Dr. George F. Barth, Director of Hygiene, City Health Department, Milwaukee, Wis., Chairman; Dr. Emma M. Appel, Employment Certificate Department, Chicago Board of Education; Dr. S. Josephine Baker, Chief, Bureau of Child Hygiene, Department of Health, New York City; Dr. C. Ward Crampton, Dean, Normal School of Physical Education, Battle Creek; Dr. D. L. Edsall, Dean, Harvard Medical School; Dr. George W. Goler, Health Officer, Rochester, N.Y.; Dr. Harry Linenthal, Director of Industrial Clinic, Massachusetts General Hospital; Dr. Anna E. Rude, Director, Hygiene Division, U. S. Children's Bureau; Dr. Thomas D. Wood, Chairman of Health Problems and Education, Columbia University, New York City.

National Anesthesia Research Society.—There has been organized recently the National Anesthesia Research Society, for the purpose of collecting data and conducting original research in this field of medicine. The objects of the Society as set forth in the constitution are:

"To promote the science of anesthesia and to enable its members, after first having obtained the approval of the Society, to submit without prejudice to the dental and medical professions, any views, findings, or accomplishments they have attained; to obtain from all available sources such information as is now extant concerning any material, liquid or gas, known to have anesthetic properties; to arrange, in coöperation with dental, medical, and anesthesia associations for the preparation and delivery of suitable interesting and educational papers on the general subject, or relative to some particular anesthetic; to use influence to prevent the publication or circulation of any false or unauthentic statements concerning any and all conditions, symptoms, or phenomena prevailing during or after anesthesia by any anesthetic, and to prepare and distribute on request, forms on which such information can be tabulated with uniformity; to distribute by pamphlet or publication, as its funds may permit, and its governing powers authorize, such reliable data as it may collect or obtain through its members or others interested in the subject of anesthesia, for use by the medical and dental professions; to coöperate with state authorities and other bodies in the preparation of suitable legislation to safeguard those to whom anesthetics are administered as well as those called upon to administer them; to use its influence in every way and to give its aid toward the advancement of the Science of Anesthesia."

The Research Committee, which will have supervision of original work and the editing of material designed for the profession and professional press, is headed by F. H. McMechan, A.M., M.D., of Avon Lake, Ohio, editor of the Quarterly Supplement of the American Year Book of Anesthesia and Analgesia. Representative anesthetists of the country, who have distinguished themselves by research and progress in their field, are being invited to join the committee.

Mental Hygiene Societies of the United States and Canada.—The mental hygiene lessons of the war was one of the chief subjects considered at the Third Convention of Mental Hygiene Societies of the United States and Canada, held in New York on February fourth and fifth, under the auspices of the National Committee for Mental Hygiene and the Committee on Mental Hygiene of the New York State Charities Aid Association.

Major General Merritte W. Ireland, Surgeon General of the Army, presided at the meeting. The examinations which were used to determine in advance whether or not American soldiers could bear the strain of war were discussed by Dr. Pearce Bailey, formerly Chief of the Division of Neurology and Psychiatry in the Office of the Surgeon General. Dr. Thomas W. Salmon, Medical Director of the National Committee for Mental Hygiene, who was in charge of the care of mental and nervous cases in the A. E. F., described methods for applying to civil life the procedure employed in dealing with mental and nervous diseases in the American Army in France. The effect of the war on research in neuropsychiatry was considered also.

Other subjects discussed were the care of mental and nervous cases by the War Risk Insurance Bureau and the Public Health Service, the mental hygiene of childhood, the mental hygiene of industry, and mental factors in physical disease. Among the speakers were Dr. E. E. Southard, Director of the Massachusetts Psychiatric Institute, Boston; Dr. E. Stanley Abbot, Medical Director of the Pennsylvania Mental Hygiene Committee, Philadelphia; Dr. William A. White, head of the Government Hospital for the Insane, Washington, D. C.; Dr. C. Macfie Campbell and Dr. John B. Watson of Johns Hopkins University, Baltimore.

At the last convention, held in New Orleans in 1916, seventeen state societies for mental hygiene were represented. Since that time new organizations have been formed in Maine, Kansas, Iowa, Virginia, Alabama, and Mississippi, and a national committee for Canada has also been organized.

New York Tuberculosis Association.—The anti-tuberculosis work in New York City which, for the past seventeen years, has been thoroughly and energetically carried on by the Committee on the Prevention of Tuberculosis of the Charity Organization Society, has been taken over by a new and larger corporation, the New York Tuberculosis Association, Inc. All the members of the old committee, including such prominent workers in the tuberculosis field as Dr. Hermann M. Biggs, State Commissioner of Health; Dr. Royal S. Copeland, Health Commissioner of New York City; Mr. Lee K. Frankel, Dr. S. S. Goldwater, Mr. Thomas W. Lamont, Dr. S. A. Knopf, and others, are members of the Board of Directors of the new Association.

The objects of the Association are: The study of tuberculosis and of the means of preventing it; the dissemination of knowledge as to the nature of the disease, its causes, and the best methods of its prevention and its treatment; the promotion of adequate facilities for the prevention of tuberculosis and for the care, treatment, and economic rehabilitation of persons afflicted therewith, and the coördination of the work of public and private agencies engaged in any of the foregoing activities.

Dr. James Alexander Miller is the president of the Association and Mr. Homer Folks is the vice-president. Dr. John S. Billings, long connected with tuberculosis work in New York City, is the Director.

A broad program of education, publicity, preventive work among children, of home treatment and after-care, coördination of existing clinics and of relief agencies, will be developed by experienced secretaries. A novel addition, in coöperation with the Federal Vocation Board, will be the opening of a workshop where, under the best sanitary conditions and medical supervision, arrested cases of tuberculosis will be restored to productive capacity under healthy surroundings.

Among the secretaries so far appointed are: Mr. G. J Drolet, statistician; Miss Gretta Jones, relief organizations; Mrs. Josephine Toering, tuberculosis dispensaries; Mr. E. C. Rybecki, labor; Mr. David Ryan, publicity.

BOSTON AND MASSACHUSETTS.

Week's Death Rate in Boston.—During the week ending January 24, 1920, the number of deaths reported was 253 against 401 last year, with a rate of 16.32 against 26.25 last year. There were 48 deaths under one year of age against 49 last year.

The number of cases of principal reportable diseases were: Diphtheria, 61; scarlet fever, 104; measles, 337; whooping cough, 63; typhoid fever, 2; tuberculosis, 41.

Included in the above were the following cases of non-residents: Diphtheria, 8; scarlet fever, 11; whooping cough, 1; tuberculosis, 5.

Total deaths from these diseases were: Scarlet fever, 2; measles, 5; whooping cough, 3; typhoid fever, 1; tuberculosis, 17.

Included in the above were the following non-residents: Tuberculosis, 1.

Influenza cases, 174; influenza deaths, 2. Last year: Influenza cases, 932; influenza deaths, 117.

Bequests of Mrs. L. A. Beal.—Among the bequests in the will of the late Mrs. Louisa A. Beal were the gifts of $2500 to the Nursery for Blind Babies in Boston and $500 for the benefit of the Harvard Dental School.

The Maurice Douglas Flattery Medal.—Mr. Maurice Douglas Flattery has given to

Harvard University a bas-relief bronze medal to be awarded "to the person the President and Fellows of Harvard College may judge to have made a discovery in any branch of science that would result in the greatest good to humanity in the prevention of disease or conservation of health in the broadest sense." The face of the medal bears the words, "The Maurice Douglas Flattery Medal for the Aid of Science and Health," and the figure of a Muse removing the veil from the Tree of Knowledge. On the other side are panels on which are inscribed the names of Hippocrates, Asculapius, Laennec, Harvey, and Pasteur. The gift consists of securities valued at $7,500, the income from which is to be utilized in providing a medal and $500 to be awarded annually.

Public Medical Lectures.—Announcement has been made of the annual course of free public lectures to be given at the Harvard Medical School, Longwood Avenue, Boston, on Sunday afternoons beginning February 1 and ending March 28, 1920. No tickets will be required. The following lectures will be given at four o'clock:

February 1—Dr. Richard M. Smith. Child welfare.

February 8—Dr. E. H. Place. Smallpox and vaccination.

February 15—Dr. H. C. Ernst. Protection against infection in diseases other than smallpox.

February 22—Dr. Kurt H. Thoma. Diseases of the teeth in relation to systemic disturbances.

February 29—Dr. Frederick T. Lord. Pneumonia.

March 7—Dr. Percy G. Stiles. Some aspects of alcohol.

March 14—Dr. W. T. Bovie. New conceptions of the structure of matter.

March 21—Dr. C. K. Drinker. Health and industry.

March 28—Dr. C. Frothingham. Some points of interest to the public in regard to medical education as brought out by the recent war.

Boston Medical Library.—At the annual meeting of the Boston Medical Library, held January 13, 1920, in Sprague Hall, new by-laws were adopted and under them the following officers and committees elected for the current year:

President, George H. Monks; Vice-Presidents, William N. Bullard, Homer Gage, Henry Jackson; Secretary, Walter L. Burrage; treasurer, Richard G. Wadsworth; Librarian, John W. Farlow; Executive Committee, John W. Bartol, John W. Cummin, Edward C. Streeter; Committee on Medical and Social Meetings, Malcolm Storer (chairman), Frank A. Pemberton, George D. Cutler, Hilbert F. Day, Zabdiel B. Adams; Committee on Membership and Elections, Stephen Rushmore (chairman), Gerald Blake, Robert L. DeNormandie, Halsey B. Loder, Richard H. Miller.

Resolutions were passed on the death of Sir William Osler, an honorary member.

Following the meeting, Dr. E. H. Bradford gave an interesting talk on "Osteopathy, Bone Setting and Chiropraxy."

The Committee on Public Health.—The Committee on Public Health of the Massachusetts Legislature is made up as follows: Senators Gardner W. Pearson (R), Lowell, lawyer; Arthur L. Nason (R), Haverhill, woolen jobber; David S. McIntosh (R), Quincy, granite manufacturer; Representatives Frederick P. Glazier (R) of Hudson, physician; Maurice A. Buck (R) of Billerica, physician; Bernard Early (R), Newton Lower Falls, manager paper mill; Morrill S. Ryder (R), Middleboro, retired paint manufacturer; Erland F. Fish (R), Brookline, lawyer; William Grant (R), Northampton, ice dealer; Daniel W. O'Connor (D), of Palmer, dentist; John F. Harvey (D), of Boston, newspaper compositor.

Mr. Charles N. Morgan has been engaged by the Joint Committee on Legislation of the Massachusetts Medical Society and The Massachusetts Homeopathic Medical Society to keep them informed of the progress of matters of interest in the Legislature.

Springfield Academy of Medicine.—The February meeting of the Springfield Academy of Medicine was held on Tuesday evening, February 10. Dr. Daniel F. Jones of Boston delivered an address on "Malignant Disease of the Colon."

Correspondence.

COMPENSATION FOR EYE INJURIES

Boston, January 21, 1920.

Mr. Editor:—

At the last annual meeting of the International Association of Industrial Accident Boards and Commissions at Toronto it was voted to refer to the medical committee the subject of eye injuries that they might consider the principles underlying the industrial handicap of lowered vision and make recommendations to the convention next year.

The Commissioners apparently have in mind the method of reducing to a formula this complex problem, and personally I doubt if it is feasible, because of the difference in the laws of the various states.

The difficulties in attempting to standardize general compensation laws would be manifest in an acute form in standardizing payments for the loss of special senses. From the Massachusetts standpoint, the Industrial Accident Board believes that any changes in the administration of the laws is inadvisable, unless a raise from one-tenth normal vision for specific payments be considered.

The following is the section in regard to specified eye injuries under the Massachusetts Compensation Law:

"In case of the following specified injuries the amounts hereinafter named shall be paid in addition to all other compensation:—

"(a) For the reduction of one-tenth of normal vision in both eyes with glasses, sixty-six and two-thirds per cent. of the average weekly wages of the injured person, but not more than ten dollars nor less than four dollars a week, for a period of one hundred weeks.

"(b) For the reduction to one-tenth of normal vision in either eye with glasses, sixty-six and two-thirds per cent. of the average weekly wages of the injured person, but not more than ten dollars nor less than four dollars a week for a period of fifty weeks."

The Board has been liberal in the consideration of this section and has construed the loss of vision not to mean central visual acuity alone, but that the vision remaining must be practical and not theoretical vision in the injured eye, such as following operative interference. In other words, they are inclined to deal with industrially practical vision.

It is perfectly evident that this is not entirely a medical problem and must be considered from the administrative aspect as well. Will you kindly take this up with the President of your State Medical Society or such other persons or organization who may offer aid?

As a preliminary, I would like suggestions as to practice or procedure which you as a practical man, having to do daily with visual estimation as correlated with compensation payments, can adduce for the perfection of existing accident laws.

May I formulate two propositions which require answer?

What is the normal human vision in tenths for infinity which will correspond to normal clear vision at working distance, taking into account age, accommodation, type of work, stature, posture and other cogent factors?

Second: Is it possible to standardize methods of examinations?

Yours very truly,
Francis D. Donoghue, M.D.,
Chairman, Medical Committee, I. A. I. A. B. & C.

BACTERIOLOGICAL DIAGNOSIS OF DIPHTHERIA.

Lynn, Mass., January 24, 1920.

Mr. Editor:—

In the course of work as bacteriologist of the Health Department of the City of Lynn, I have been impressed with the frequency of discrepancies between the clinical description of throat cases and the bacteriological findings. It is not unusual to receive a clinical story of typical diphtheritic membrane involving tonsils, uvula, etc., and yet to find no diphtheria bacilli in the culture, in fact in some instances the smear will show a pure culture of staphylococcus.

Whatever doubt the bacteriologist may have as to the accuracy of the clinical description, is often dispelled by a second culture which contains many typical organisms. In other instances the true nature of the case is shown by the positive release cultures. In short, here we have true diphtheria from which a negative culture is obtained.

A consideration of this year's cultures showed that such occurrences are not rare. In the first 2000 cultures examined in 1919, there were 949 for diagnosis. In this number were 135 cases showing diphtheria bacilli. Consideration of these 135 cases showed ten cases in which the first culture had been negative and subsequent cultures had shown the presence of diphtheria. Approximately 7 per cent. of the cases of true diphtheria showed a negative first culture.

There is another class of cases which probably at least equals the 7 per cent. referred to above. In this class the diagnosis is so obvious that even with a primary negative culture no second diagnostic culture is taken and the organisms have disappeared before release cultures are sent to the laboratory. There is therefore no bacteriological evidence of the true nature of such cases and their number can be only roughly estimated. In this class must also be included the laryngeal diphtherias. Here bacteriological diagnosis is obviously especially unreliable owing to the inaccessibility of the membrane.

The explanation of such discrepancies as the foregoing lies, in a great measure, in the failure to recognize that the bacilli of diphtheria are found in greatest numbers beneath the membrane. A negative culture will often be obtained if the organisms are sought only on the outer surface of the suspected membrane. This is often the case where there exists a heavy and clinically unmistakable membrane. In children, whose struggles make the guiding of the swab a difficult matter, we have great likelihood of failure to secure a fair sample of the offending organisms. Another source of error lies in the taking of a culture soon after a patient has used an antiseptic gargle. The use of old dried up culture material also at times contributes to the number of unsatisfactory results.

The dependence to be placed upon a negative culture is proportional to the care exercised in securing the suspected material. Unless the swab can be guided by sight and firmly inserted *under* the edge of the membrane, or at least rubbed well into the advancing edge of the membrane, there is sure to be a certain fairly large percentage of true diphtheria cases which will fail to show the organisms on culture.

Summary: A very appreciable per cent. of cases in this series failed to show diphtheria organisms in the first culture but did show them in subsequent cultures. This number can be diminished by appreciation of the importance of exercising greater care in securing material from suspected membranes. Recognition of the fact that a single culture may be misleading will save delays, often fatal, in the administration of antitoxin.

It should be emphasized that notwithstanding a negative culture or even while waiting for the bacteriological report, in clinically suspicious cases, antitoxin should be administered without delay.

Edward Scott O'Keefe, M.D.

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APPETITE VERSUS THERAPEUTICS.

Cambridge, January 27, 1920.

Mr. Editor:—

It seems to the subscriber that it is now full time for the medical profession to tell the truth as it sees it in regard to the pretended therapeutic use of alcohol. The flu-bug itself is not more elusive than the physician who will explain for what and why he prescribes the substance. Prohibition and the influenza epidemic combine to make it a timely topic for clear and general expression.

We naturally expect "the wets" (already beginning in many cases to get dry) to use every excuse to wet themselves up again, but when they try to drag in the medical profession as an authoritative accessory before the fact, it seems to be time for serious-minded medical folk to protest and in some practical manner to object.

It appears to be certain that an overwhelming majority of the medically educated, if asked, would say that, save in very rare circumstances, scientific medicine has no use for ethyl alcohol for either internal or external administration.

I urge that any argument against this proposition be considered in the clear and definite light of physiology and of psychology rather than in the lurid illumination of pretense and of outworn tradition. The medical man, like other men, may "lap up a few" (if the slang may be forgiven?) whenever he wishes so to do (!), but as a physician to the sick very rarely will he prescribe them, for he knows that other drugs or other measures serve every unusual purpose better. And right now, in some degree the honor, as well as the scientific wisdom, of our profession tends toward the stake! It is a case of combinations between sincerity, ignorance, knowledge, and pretense. Yet the issue between a persisting habit-appetite and scientific therapeutics is perfectly definite and not properly to be ignored.

George Van Ness Dearborn.

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UNITED STATES CIVIL SERVICE EXAMINATION

Dental Mechanic, March 9, 1920.—The United States Civil Service Commission announces an open competitive examination for dental mechanic. A vacancy in the Medical Department at Large of the War Department, Washington, D. C., at $1,800 a year, with possible advancement to $2,400 a year, and vacancies in positions requiring similar qualifications, at this or higher or lower salaries, will be filled from this examination, unless it is found in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

This examination is open to all citizens of the United States who meet the requirements.

Applicants should at once apply for Form 1800, stating the title of the examination desired, to the Civil Service Commission, Washington, D. C.; the Secretary of the United States Civil Service Board, Customhouse, Boston, Mass., New York, N. Y., New Orleans, La., Honolulu, Hawaii. Post Office, Philadelphia, Pa., Atlanta, Ga., Cincinnati, Ohio, Chicago, Ill., St. Paul, Minn., Seattle, Wash., San Francisco, Calif.; Old Customhouse, St. Louis, Mo.; Administration Building, Balboa Heights, Canal Zone; or to the Chairman of the Porto Rican Civil Service Commission, San Juan, P. R.

Applications should be properly executed, including the medical certificate, and must be filed with the Civil Service Commission, Washington, D. C., prior to the hour of closing business on March 9, 1920.

Applicants entitled to preference should *attach to their applications* their original discharge, or a photostat copy, or certified copy thereof, or their official record of service, which will be returned after inspection by the Commission.

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SOCIETY NOTICES.

Harvard Medical Society.—The next meeting of the Harvard Medical Society will be held in the Peter Bent Brigham Hospital Amphitheatre (Van Dyke St. entrance), Tuesday evening, Feb. 17, at 8.15 o'clock.

Program:

1. Dr. H. T. Kebabyian: The Armenian Situation.
2. Dr. W. M. Boothby (Mayo Clinic): Thyrotoxic Adenomata (Plummer's Disease).

Medical students and physicians are cordially invited to attend.

Boston Medical Library in Conjunction with the Suffolk District Medical Society.—Surgical Section meeting, John Ware Hall, Wednesday, February 18, 1920, at 8.15 p.m. John A. Hartwell, M.D., Clinical Professor of Surgery, Cornell Medical School, and Director of Surgery, Bellevue Hospital, will speak on "Abscess of the Lung."

R. H. Miller, M.D., *Secretary*.
D. F. Jones, M.D., *Chairman*.

New England Ophthalmological Society.—The next meeting of the New England Ophthalmological Society will be held at the Massachusetts Charitable Eye and Ear Infirmary, 233 Charles Street, Boston, on Tuesday evening, February 24, 1920, at eight o'clock. Program: Hospital Cases—Plastic of lower lids. Papers: "Preliminary Report on Sub-Conjunctival Cataract Operation," Dr. W. Holbrook Lowell; Discussion by Drs. Greenwood, Lancaster, and Ellis.

W. Holbrook Lowell, *Secretary*.

The Norfolk District Medical Society.—A regular meeting of the Society will be held at The Psychopathic Hospital Tuesday, February 24, at 4 p.m. Business: Communications:—Discussion of Clinical Types of Neuro-Syphilis. Spinal Fluid Examination. Presentation of Treated Cases. Demonstration of Intra-Spinous Treatment.

Bradford Kent, M.D., *Secretary*.

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RECENT DEATHS.

Dr. Charles H. Cook died recently at his home in Natick at the age of 74 years. Dr. Cook was born in Greensboro, Vermont. He attended the medical school at the University of Vermont and served as an assistant at King's County Hospital, New York City. In 1875 he began practising in Natick and married Miss Rosa F. Perkins of Barre, Vermont. Dr. Cook was a member of the State Board of Registration in Medicine, and president of the Federation of Medical Examining Boards of the United States in 1915 and 1916; he was a member of the American Medical Association and for many years councilor of the Massachusetts Medical Society. Dr. Cook served as a trustee of the Leopold Morse Hospital until his resignation about one month before his death.

The Boston Medical and Surgical Journal

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SURGERY OF THE GENITO-URINARY TRACT OBSERVED ABROAD AS CONSULTANT IN UROLOGY, BASE SECTION 2, FRANCE.

BY RICHARD F. O'NEIL, M.D., BOSTON,

Genito-Urinary Surgeon to Out-Patients, Massachusetts General Hospital.

(Formerly Major M. C., U. S. A.)

IN this presentation I shall not attempt to do more than to give general impressions, personal experiences, and to report, more or less in detail, some of the cases seen of which I made notes at the time. As Chief of the Urological Service and Assistant to the Chief of the Surgical Service in Base Hospital 6, and later as Consultant in Urology to Base Section 2, I had an excellent opportunity to observe a large number of wounded.

Base Hopital 6 went abroad in July, 1917, and was ordered to take over a large French hospital near the city of Bordeaux. The transfer was effected about September first of that year. During the months that followed many additions and improvements were made and much new construction undertaken and pushed as rapidly as possible and completed none too soon for the rush which began in the following spring and continued until after the Armistice.

The hospital rapidly expanded from a few hundred beds to about 4,500 in that time. More than 30,000 patients were cared for. Of this there were 23,000 battle casualties.

The Surgical Division handled about 21,000 patients; in this are included a small number in proportion of cases of acute civil surgery, as acute appendicitis, operations for empyema, traumatisms, etc. The remainder of the battle casualties were made of gassed cases. As urologist to the hospital I had charge of all the urological cases. These included diseases and injuries of a civil as well as of a military nature.

Of the former it may be well to state here, that no cases of uncomplicated venereal disease were admitted to base hospitals, they being treated in regimental infirmaries, camp hospitals and venereal camps. Of the complications a large number of cases of gonorrheal epididymitis were treated almost invariably by operation with uniformly good results. A few cases of epididymitis occurring with spinal meningitis were observed. Gonorrheal arthritis was treated in conjunction with the orthopedic department. Some of these arthritic cases were very severe. I recall two or three very bad infections of the knee joint which did remarkably well after simple aspirations of the joint with a large trocar and irrigated with hot sterile water.

Some of the chancroidal lesions were really terrific and required hospitalization. In some cases there was entire destruction of the glands penis, in some partial destruction of the shaft, and in others extensive involvement of the inguinal and suprapubic regions.

Stricture of the urethra, retention of urine, severe prostatitis, prostatic abscess, and other suppurations were met with and treated by the ordinary surgical methods.

A number of severe traumatisms of the genito-urinary tract were seen, including a rupture of the kidney, which made a good recovery without operation. Several cases of rupture of the urethra, severe blows in the perineum, fractures of the pelvis, etc. A number of cystoscopic examinations were made for the Medical Department for various lesions. Cases of lithiasis and renal and genital tuberculosis were referred to the Disability Board for duty in the S. O. S. or return to the United States. Some of the first received operative treatment.

It may be stated that in the Army, the specialties of syphilis and dermatology were included under the Department of Urology. In our hospital all such cases were most ably taken care of by Doctor, then Major, E. L. Oliver, of Boston.

In June, 1918, I as appointed Consultant in Urology for Base Section 2, my work being outlined as follows: "In addition to other duties, to make visits to the various base hospitals and camp infirmaries in this section for the purpose of seeing cases of war and civil injuries of a urological nature."

There were several other base hospitals in Section 2, including the large hospital centre at Beau Desert of about 10,000 beds, as well as a number of camp infirmaries. This gave me the opportunity to see a number of interesting cases and to have such as I might think advisable transferred to my own service at Base Hospital 6.

I should like to take this opportunity to express my appreciation and thanks to the Commanding Officers and Ward Surgeons with whom I came in contact at the various hospitals and infirmaries for their courtesy and coöperation.

Because of the pressure and stress of work in the Surgical Department in the spring and summer of 1918, I had a good deal of general surgery in addition to the strictly urological work, at one time having 220 beds.

I had one ward, however, in which all wounds of the genito-urinary tract were segregated as far as possible. These were distinct from the venereal complications which were treated in the venereal ward.

This ward was the nucleus of what undoubtedly, later, would have developed into a "Center" in this area for wounds of the genito-urinary tract, had the war continued. It being the plan of the Urological Department of the Army to collect all such cases in various "Centers" as early as possible under the care of a genito-urinary surgeon with the necessary equipment and specially trained nurses and orderlies so essential for this type of work.

In a recent paper by Dr. A. R. Stevens* of New York, he calls attention to the relatively small numbers of wounds of the genito-urinary tract observed in base hospitals abroad. His experience is entirely borne out by my own.

I regret that I am unable to give any definite figures or percentage of the number of cases of this type in our hospital, nor do I know whether any such are available at present. Statistics went by the board during the rush. Patients were evacuated from the hospital for return to the United States or to other hospitals and convalescence camps when they were able to go, with great rapidity, to make room for new arrivals, and the numbers were lost sight of.

This much I can state, that the genito-urinary war wounds were relatively few in number. This is particularly true of the wounds of the upper tract. Wounds of the bladder and the urethra were more common, as a rule very severe, prone to complications and requiring much care. And in a number of cases the end result was unsatisfactory, distressing, and disabling from urinary fistulae, stricture, permanent perineal urethra, etc., requiring continual treatment or further surgical intervention. This is particularly true of wounds of the perineum with fracture of the pelvis and injury to the urethra. I saw a number of such cases.

Wounds of the external genitals were, I should think, more frequently met with. I shall speak of them later.

In my observation, wounds of the genito-urinary tract rarely occurred alone, being nearly always associated with other wounds. They fell roughly into two classes, the distinction being one of degree only.

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* Journal of the American Medical Association, Vol. lxxii, No. 22, p. 1589.

In one class there were multiple wounds from a number of shell fragments, some portion of the genito-urinary tract being involved in the general damage. Such cases were very severe and the mortality very high.

The following case will serve as sufficient to illustrate this type:

J. S., Pvt. Co. B, 344 M. G. Bat. Gun shot wound,* multiple, severe. Received in action October 15, 1918. Head, penetrating; right forearm, penetrating; right thigh, penetrating; genitals lacerated. Entered Base Hospital 6 November 1, 1918. Seen in consultation with ward surgeon. Transferred to Urological Service.

Examination: (1) Gun shot wound, head; wound, mid-occipital region, two inches long; infected; sutures cutting; bare bone but no fracture. (2) Gun shot wound, right forearm. Circular amputation, junction middle and lower third. Wound clean and granulating. (3) Gun shot wound, right thigh; large "debridement." Wound 12 inches by 3. Anterior aspect right thigh clean and granulating. (4) Gun shot wound lacerated, genitals. Shaft of penis and skin of anterior surface of scrotum gangrenous and sloughing. Both testicles exposed but apparently uninjured. (5) Operation wound. Suprapubic cystotomy. Suprapubic tube.

The suprapubic tube was not draining satisfactorily and the dressings were urine soaked. A large catheter was put in its place, which drained well and kept him perfectly dry. The genital and other wounds improved a good deal under careful dressings, nothing further being attempted or indicated.

This man suffered greatly, exhibited unlimited grit and put up a good fight, but the general condition was poor and he died seventeen days after entrance, from exhaustion and septic absorption. There was a terminal broncho-pneumonia.

In the other type some one organ as the kidney, bladder or urethra was injured by a single fragment or a through and through perforation by a machine gun bullet. These were almost always accompanied by a perforating wound of the hip, buttocks, or thigh.

It is to be remembered that I am speaking of conditions in base hospitals and that all these patients, or practically all, had received their first operative treatment elsewhere, so that any discussion of the immediate treatment of such wounds is out of place here. I shall confine myself to reporting the cases as they came to us or were seen in consultation at other hospitals, anywhere from thirty hours to several weeks after being wounded or having their first "debridement."

Wounds of the Kidney. These were very few in number. I, personally, know of but three that were in our hospital. One of these, while not a battle casualty, presents certain points of interest which warrant its being reported.

It can be easily understood that a severe wound of the kidney would cause death from hemorrhage before any surgical aid could be given. This, undoubtedly, accounts in a large part for the rarity of these cases, not only in the base, but in the evacuation hospitals as well, which has been the experience of a number of surgeons I have talked with who had served many months in front line hospitals. Stevens has quoted some groups of statistics which show injury to the kidney in from 4 to 9% of all perforating abdominal wounds.

It may be of interest to note here that perforating abdominal wounds were likewise very uncommon in our hospital. I recall only a few.

Of the three kidney cases, one patient showed a clean, partially sutured wound in the left loin. The "Field Card" stated there had been an injury to the lower pole of the left kidney. There were no symptoms, the urine was negative. He made an uninterrupted recovery.

In the second there had been an injury to the spine and a nephrectomy for hemorrhage. Brief extracts from the Field Card are as follows:

"R. H., Sergt. Co. F, 355 Inf. Gun shot wound, back (left kidney). Received in action October 21st. Evacuation Hospital 10: Through and through wound, back; wound of entrance, left, post axillary line; wound of exit, right, post axillary line. Urinary retention, catheter showed blood in urine.

"Base Hospital 15: 'During night of October 27, severe hemorrhage into bladder. Patient became pulseless. Salt solution infusion. Cystoscopy showed bleeding from left kidney. Left lumbar nephrectomy, suprapubic drainage of bladder.'

"December 15, 1918. Base Hospital 6: Seen in consultation with ward surgeon. Gun shot wound, back, perforating left post axillary line to right, back. Nephrectomy wound, left loin. Suprapubic wound. Bed sore. Paralysis below waist line. Bladder satisfactorily drained by putting large catheter in place of suprapubic tube.

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* This term used to describe all such whether shell fragments or machine gun bullet.

This case was of interest in that the severe hemorrhage from the kidney occurred a week after being wounded. It is also interesting to note that the paralysis was improving while he was waiting for evacuation to the United States. He was able to move his legs and had rectal control. He was still in the hospital when I left, February 14, 1919.

The third case was treated throughout in Base Hospital 6.

R. S., Pvt. Bat. D, 17 F. A. Gun shot wound, perforating, left upper arm. Gun shot wound, perforating, left chest to left back. Brought to Base Hospital 6 November 8, 1918, at 10 P.M. History of having been shot by an M. P. three hours before, while resisting arrest.

Examination: Gun shot wound, perforating left upper arm. External aspect, no fracture. Gun shot wound, chest. Wound of entrance, left axillary line, between seventh and eighth ribs. Wound of exit, to left of spine, level of third and fourth lumbar vertebrae. Condition good. Wounds cleaned. No evidence of intra-abdominal injury.

Slight hematuria for the next two days.

November 24 (sixteen days after being shot). Seen in consultation with ward surgeon for recurrence of hematuria. Urine dark, with clots. Abdomen negative. Flanks negative. Wounds healed with dry scabs. Pulse 84. Condition good. Observation. Transferred to Urological Service.

November 26. In late afternoon patient had a retention of urine from clots. Taken to operating room. Clots washed out of bladder through a large evacuating tube. Condition good. Color good. Pulse normal.

November 27. Cystoscopy after washing out some old clots showed slightly blood tinged efflux from left ureter, urine from right kidney slightly cloudy. Sediment showed a little pus microscopically. No. 6 ureter catheter was tight. No. 5 passed.

December 2. Condition good. Some pain in loin. Temperature 99.4.

December 7 (30 days after injury). No symptoms until suddenly at 7 P.M. urgent desire to micturate. Passed two urinals full of fresh blood. Bladder distended, unable to void more. Patient blanched. Pulse 110. Taken at once to operating room. Ether. Left lumbar nephrectomy. (Maj. O'Neil—Lieut. Clark.) Fat capsule thickened. Kidney very adherent. Some broken down material at lower pole of kidney. (Beginning perirenal abscess ?) Considerable bleeding during operation. Wound sutured with drain. 16 ounces of salt solution given intravenously. Blood typed. Found to be Group 4. Donor found. 500 cc. of citrated blood transfused by Major Lineback. Much clot washed from bladder. Condition after operation, fair. A. T. S. 1500 units.

December 8. Urine clear. Condition good.

December 11. Wick removed. Temperature normal.

Convalescence uneventful.

It is interesting to note that the severe hemorrhage occurred 30 days after the injury. The kidney showed a large through and through perforation opening into the lower calyx with considerable destruction of the lower pole. There was infection with the subsequent erosion of a good sized blood vessel.

No wounds of the ureter were observed.

Wounds of the Bladder. According to the statistics before quoted bladder injuries occur in from four to seven per cent. of all perforating abdominal wounds. I will give brief notes on three cases, all of which were associated with wounds of the buttocks.

R. E. F., Corp. Co. G, 137 Inf. Gun shot wound, perforating, machine gun bullet, lower abdomen to right buttock. Injury to bladder. Received in action September 29, 1918. Seen in consultation at Base Hospital 114. Entered Base Hospital 114 October 8, 1918. No primary operation. Wound of entrance just above symphysis pubis leaking urine. Wound of exit, right buttock. No fracture of pelvis. Constant drainage catheter. Sprapubic sinus closed in two weeks. Good control of urine. No obstruction in urethra.

Another case:

M. J. D., Sergt. Co. E, 139 Inf. Gun shot wound, perforating, machine gun bullet, lower abdomen to left buttock. Perforation of bladder and rectum. Received in action September 27, 1919. "Debridement," suprapubic drainage of bladder. Entered Base Hospital 6 October 11, 1918. Seen in consultation with ward surgeon. Transferred to Urological Service. Granulating wound in suprapubic region, leaking urine. Wound in left buttock which discharges gas and feces. Put on constant urethral drainage. Suprapubic sinus closed in two weeks. Abdominal wound healed promptly. From time to time foul smelling discharge from sinus in buttock, which is becoming much less. X-ray negative for F. B. Transfer to United States.

The third case, a perforating wound of the buttock and bladder, had a hematuria. Cystoscopy showed a healing wound above and to the outside of the right ureter.

Wounds of the Spermatic Cord. I observed only one such and the following case is reported for that reason:

P. H., Pvt. H. 2 Co., 104 Inf. Gun shot wound, perforating, right buttock to right groin. Received in action October 29, 1918, 9 P.M. Operation "debridement" same night. Entered Base Hospital 6 November 1, 1918. November 19 seen in consultation with ward surgeon for swelling of scrotum. Transferred to Urological Service.

Examination: Wound of entrance, right buttock; wound of exit, right groin; both infected. Right spermatic cord thickened. Right side of scrotum enlarged and fluctuant. Patient running high irregular temperature. Diagnosis: Wound of cord, secondary abscess of scrotum. Incised, local anesthesia, much pus evacuated. Testicle covered with slough but was left.

December 3. Wound of groin and scrotum healed. Some induration in buttock.

December 6. Secondary abscess of buttock opened, connected by through and through drain with original buttock wound.

Convalescence slow.

Wounds of the Perineum Involving the Urethra. These were, as a rule, severe and troublesome cases, often complicated by fracture of the rami of the pelvis and almost invariably accompanied by perforating wounds of the thigh, buttocks or groin. It is in this type of case that one meets with the disastrous end results already referred to, of fistulae, lack of urinary control, and permanent perineal urethrae. I have selected the following cases as examples:

Notes from "Field Card."

E. G., Pvt. Co. E, 39 Inf. Gun shot wound, perforating, suprapubic and perineum. Injury to urethra. Gun shot wound, penetrating, inner aspect both thighs. Gun shot wound, penetrating left ankle. G. S. fracture symphysis pubis. Received in action August 5.

August 6. "Debridement." Suprapubic cystotomy. External urethrotomy, attempted reconstruction of urethra.

August 14. Suprapubic tube out.

August 18. All urine through perineal tube.

Entered Base Hospital 6 August 21, Urological Service. Examination: Small suprapubic wound discharging small amount of serum. Large, granulating perineal wound with drainage tube to bladder. Granulating wound inner aspect both thighs, and granulating wound left ankle. Nothing could be passed through urethra. All instruments came up against a solid obstruction.

September 21. All wounds clean and healing. All urine by perineum. Had control. Transferred to Base Hospital 8 for evacuation to United States.

Fracture of pelvis.

In the next bed, at the same time, was an almost similar case, except that he had in addition a wound of the penis, resulting in the loss of the left corpus cavernosum and a wound of the scrotum, involving the loss of the left testicle. He entered Base Hospital 6, Urological Service, the same day as the former case, and was evacuated to Base Hospital 8 the same day. "All urine by perineum. Had control."

In the two following very similar cases there was a much happier result:

G. P. R., Pvt. Co. G, 58th Inf. Gun shot wound, perforating, left hip to right buttock. Machine gun bullet. Injury to the urethra; urinary fistula left hip. Fracture of pelvis. Received in action July 18, 1918. July 19, "debridement" of wounds. Entered Base Hospital 6 July 29, Urological Service. Examination: Granulating wound left hip. Leaking urine. Granulating wound right buttock. X-ray showed fracture descending ramus of right ischium. After a good deal of patience, a silver catheter was passed into the bladder. This was followed by a soft rubber catheter with a stylet, put on constant drainage.

September 21. Catheter has been out for 10 days. No leaking from sinus in left hip since catheter was introduced. Has good control. Wounds clean and healing. Transferred to Base Hospital 8 for evacuation to United States. Fracture of pelvis.

F. N., 2nd Lieut. 113 Inf. Seen in consultation, Base Hospital 114, on October 31, 1918. Gun shot wound, penetrating; machine gun bullet. Inner aspect right thigh, abrasion right scrotum traversing perineum. Exit, left groin. Urinary fistulae perineum and left groin. Some urine passed through urethra. Operation: "Debridement," October 16, 1918. Put on constant urethral drainage four days later. Catheter in place for five days. No leaking since. None today. Passed eight ounces. Good control. Wounds clean and granulating. To have dilatation with sounds.

The result obtained in the following case was of a good deal of satisfaction to me as it was an unpromising looking proposition, there being a urinary fistula of the left groin.

Notes from "Field Card."

J. E., Pvt. Co. I, 26 Inf. Gun shot wound, perforating, laceration of left side of scrotum. Injury to urethra. Gun shot wound, penetrating, right thigh. Received in action October 9, 1918.

October 10. Operation: "Debridement" of wounds. Removal of left testicle. (Urethra has been sutured over a catheter. This was done through the lateral wound of the scrotum.) Bullet removed from right thigh. Transferred from Base Hospital 114 to Base Hospital 6. Urological Service November 12, 1918. Examination: General condition poor, color poor. Normal temperature. Left testicle absent. Irregular granulating wound left groin extending to left scrotal fold through which all urine runs. Granulating wound inner aspect right thigh and right buttock. Back ulcerated. Nothing could be passed into bladder, all instruments held up about four inches from meatus. He stated the catheter came out a short time after operation and all attempts to get it back failed. He was continually wet, having no control. Incontinence of retention. The dressings were changed almost continuously and much credit is due to the nurse who practically "specialed" him. After a week the condition of the skin and back had improved greatly and I decided to explore him.

November 18 (40 days after injury). Ether. A filliform passed into the sinus in the groin apparently entered the bladder. An incision was then made in the perineum and the urethra found to have been drawn high up to the left by cicatrical contraction, sharply angulated with an opening at the apex. The urethra was entirely freed, the strictured area resected longitudinally and sutured transversly over a catheter passed through the urethra into the bladder. A. T. S. 1500 units. The catheter drained well, the sinus ceased to leak. The improvement in the general condition was marked and immediate. The catheter was kept in place for two or three weeks, requiring frequent changing as there was a marked tendency to incrustation. During convalescence he had two attacks of pyelitis with high temperature and tenderness, first over the right, then over the left kidney. The catheter was replaced during these attacks. The last note states he was up and about, had good control. He had been having dilatation with sounds up to 23 French at intervals. The urine was slightly cloudy, albumin trace. The general condition much improved. Other wound healing slowly. To be transferred to the United States.

Two other cases in this class are as follows:

The first is of interest as it did not seem possible that so favorable a result could occur. The patient had a very large "debrided" wound of the perineum involving the anus, from which urine and feces were being constantly discharged. He was seen in consultation with the ward surgeon October 17, 1918, but remained on the General Surgical Service. A catheter was fastened to the urethra for ten days, after which time there was no urinary leaking. Discharged to the United States on December 8, 1918. Wound not healed. Some incontinence of feces.

The second case was also a satisfactory one. Seen in consultation Base Hospital 114, October 2, 1918:

A. C., Bugler Co. I, 11th Inf. Gun shot wound, perforating, right scrotum and urethra. Received in action September 12, 1918. Operation, "debridement." Removal of right testicle, and suprapubic drainage. Patient had been etherized a few days before I saw him at Base Hospital 114 and put on constant urethral drainage. Catheter came out and could not be put back.

Examination: Suprapubic wound dirty and incrustated. Some infection of pre-vesical space. Some leaking about suprapubic tube. Granulating wound, right side of scrotum close to fold of groin, leaking urine. Nothing could be passed into bladder by urethra. Catheter on stylet passed through suprapubic wound into internal meatus. Catheter pushed down on stylet and appeared at external meatus, another catheter sewed to it and pulled down into bladder. Put on constant drainage. Both wounds ceased to leak.

October 20. Discharged to the United States. "Wounds not healed. No leaking. Good control. Some frequency. Bladder capacity fair. Fracture right ramus of pelvis."

I could cite other cases but these are sufficient illustration of this type.

Wounds of the External Genitals. It will be observed in some of the foregoing cases that wounds of the scrotal contents requiring the removal of one or both testicles were met with in connection with other wounds of the thigh, etc. Also at times plastic operations were necessary to cover in skin defects in the scrotum. These cases belong rather to the general than to the urological surgeon.

Wounds of the Penis. A few wounds of the penile urethra were seen, accompanying through and through wounds of the thigh:

J. S., Pvt. Co. D, 307 Inf. Seen in consultation Base Hospital 114 October 31, 1918. Gun shot wound, perforating, penis and left scrotum. Gun shot wound, perforating, left thigh. Received in action September 14, 1918. Base Hospital 114, September 24, 1918. "No urine from meatus. Came through fistulae in penis, one on dorsum, the other to left of fraenum.

Examination: October 31, through and through wound of penis. Wound on dorsum healed. Wound to left of fraenum leaking. Urethra closing down. To have dilatation, urethrotomy if necessary.

Note: Two weeks later urethra had been dilated. Wound healed.

A similar case from Base Hospital 6:

W. L. B., Corp. H.Q. Co., 167 Inf. Gun shot wound, perforating, machine gun bullet, penis, left scrotum and left thigh. Received in action September 26, 1918. Base Hospital 6, October 12, 1918. Examination: Through and through wound of penis, perforating urethra. Entrance dorsal surface back of coronal sulcus. Exit left of fraenum. Wound of scrotum. Left testicle absent. Wound inner aspect left thigh. Urine leaked from both wounds in penis.

November 20. Wounds of penis healing. No leaking. No stricture. Has been having dilatation. Transferred to the United States because of contraction of wound of thigh.

These cases will require intermittent dilatation the same as any traumatic stricture.

I saw one other case where there was a through and through machine gun bullet perforation of the penis which did not involve the urethra.

The following case differs from the others, requiring operative closure of the fistula. The result was perfect.

E. D. J., Pvt. M. G. Bat., 26th Inf. Gun shot wound, right arm, perforating; penis, perforating; scrotum, lacerating; right foot, perforating. Received in action October 7, 1918. Operation, "debridement" of wounds. Base Hospital 6, October 17. Seen in consultation with ward surgeon. Transferred to Urological Service. Examination: Gun shot wounds forearm and dorsum right foot clean, nearly healed. Gun shot wound of penis, perforating. Wound of entrance through preputial opening penetrating prepuce at sulcus to left of fraenum. Exit shaft of penis, about middle. Skin has been "debrided" from under surface of shaft of penis for about two inches from the base and from anterior surface of scrotum. There is an opening in the floor of the penile urethra at its middle about half an inch long, through which all urine passes.

November 1. Culture from wound of penis showed no gas bacilli or streptococci. Ether. Plastic operation for closure of urethral fistula and repair of skin defect, penis and scrotum. Bladder drained by catheter through small perineal wound.

November 10. Catheter out. Wound healed by first intention. No leaking.

November 16. Transferred to the United States because of wound in foot.

The mortality of the genito-urinary wounds is generally conceded to be high. That is undoubtedly true for reasons before stated, and accounts for the small number reaching hospitals. The mortality in Base Hospital 6 was *nil,* except in cases of multiple severe injuries, and the results were, I think, as good as could have been expected.

I had no opportunity to try the *laissez faire* treatment in retention of urine due to paralysis in wounds of the spinal cord which is advocated by British surgeons. What cases I saw had been already subjected to suprapubic cystotomy or constant urethral drainage.

Such, in brief, were some of my observations and experiences with war surgery of the genito-urinary tract abroad.

But I think one of the most vivid impressions that remains is the cheerful courage and philosophy with which the doughboy "took his medicine." And this applies strongly to the class of cases just reported.

We had good material, mentally and physically, to work on.

In conclusion, I apologize for this sketchy and unscientific presentation.

THE MENTAL FACTOR IN THE CHRONIC INTESTINAL INVALID.*

By John Bryant, M.D., Boston.

At the last annual meeting of this Association, Dr. Jacob Kaufmann gave a most instructive short paper on the "Psychic Element As An Important Factor in the Development and Treatment of Peptic Ulcer." He stated that "as a rule we are dealing here with high-strung, excitable individuals who are prone to indulge in over-activity." He referred to the fact that "the intimate connection between the mental status and digestive activity and its disturbances, long known to the laity as well as to medical observers," had been experimentally demonstrated by many able workers, among whom he mentioned Pawlow and Cannon. Later in his paper, the following paragraph appeared.

"Whatever other medical or surgical treatment may be indicated, according to the condition which the case presents, the final result, especially the prevention of recurrences, depends to a high degree on the possibility of eliminating further periods of display of harmful psychic influences. With this object in

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(*) Read in part at the Annual Meeting of the American Gastro-Enterological Association, June 10, 1919.

view, we must enlighten the patient on his short-comings, we must advise him to avoid emotional excesses and to redress faulty habits of mental activity. This may involve a thoroughly revised mode of living and eventually necessitate a change of occupation."

These remarks of Dr. Kaufmann's were applied to a consideration of treatment of peptic ulcer. They apply no less to many other classes of cases, and especially to the chronic intestinal invalid, with whom the writer has been concerned for the past ten years.

The object of the present paper is to give two case histories which demonstrate the applicability of Dr. Kaufmann's thesis to the chronic intestinal invalid. The term *chronic intestinal invalid* is applied to the individual who is usually in rather poor health from an intestinal point of view. Many of these individuals do not even associate their poor health with intestinal abnormalities, due to the fact that they have very little gastric distress; also, because they have a daily bowel movement, the idea that this movement may be one or more days late in arriving never having been even considered. There is often, on the other hand, a clear history of intestinal trouble dating back to childhood as in Case 1 here reported. Also as in Case 1, which is the third generation to suffer from intestinal trouble, heredity frequently seems evident.

The degree of poor health is very variable. Although many of these chronic intestinal invalids may get along well for months at a time under favorable conditions, excessive fatigue, either mental or physical, almost invariably precipitates a train of symptoms among which intestinal pain, and intermittent diarrhea, or constipation predominate. Accompanying this more purely gastro-intestinal display of symptoms is a condition of bodily exhaustion varying in degree according to the length of time for which the particular patient has been under strain. From the point of view of physical type, the chronic intestinal invalid is usually "high-strung and excitable"; this mentality is usually heralded by a long, thin, often emaciated and carnivorous type of body. The skin is usually pallid or sallow and may be so discolored as to suggest Addison's disease. As the long thin body would lead one to expect, this type of individual often presents a textbook picture of drop-heart and all the other classic features of visceroptosis as usually described. The posture is bad. There may be a drawn anxious facies. The circulation is poor, the blood pressure being often low. The patient often suffers from cold hands and feet, and frequently, accompanying the low blood pressure and the cold hands and feet, there is a disagreeable mottled purplish color of the hands and feet which may extend almost to the elbows and knees. Perspiration, not infrequently disagreeable in odor, is often so excessive as to suggest hyperthyroidism; the palms and the soles of the hands and feet are in these persons not only cold, but clammy. As a whole, although the brain may be hyperactive, the body usually has physical inefficiency written all over it, even in the absence of demonstrable organic lesions.

The two cases about to be described were seen recently while in the Army. One is a nurse, and one is the wife of a higher Army officer. It is only accidental that both of these recent cases are of the same sex. There are many men who fall into this category of the chronic intestinal invalid, as anyone who has had gastro-intestinal practice can testify.

Case 1. Mrs. G.P.A., white, officer's wife, aged 56, entered Walter Reed General Hospital December 6, 1918.

F. H. Father died of bowel trouble at the age of 33, after an illness of three or four years, during which time he was unable to work. The paternal grandfather is said to have had the same sort of trouble, and to have died of it suddenly. Mother's family all well.

P. H. First began having trouble when six years old. Sharp attacks of pain and diarrhea about two or three times yearly, lasting from two to three days. In intervals, fairly healthy. At 16-17 years of age the attacks became more frequent and "colds would settle in the bowels." Menstrual history began at the age of 15, very stormy, always great pain, in bed for 24 hours, quantity slight; gradual improvement after thirty years of age. Patient was married at 28, but had no children; this was attributed to a runaway accident and the severe nervous state which followed. Underwent several operations for sterility but without effect. At 32 was operated upon in New York for "ulcers of the rectum" and the ulcers were burned. This relieved for a time the severe and more or less constant rectal pain. This operation occurred while the patient was in hospital for displacement of the uterus.

The abdominal pain, either general or in the right lower quadrant, gradually became worse. Five years ago, patient had an interval appendix removed. Has been more free of localized pain since, but there has been no improvement in the general abdominal pain associated with dysenteric spells. These have come six or eight times a year, lasting several days to two weeks, at which time patient always gets very weak and has bearing down pains. The rectal pain is occasionally severe enough to require morphine. Patient sleeps poorly, often remaining awake after two or three o'clock in the morning. Appetite is good, but is afraid to eat on account of bowel condition. She has avoided coarse or rough foods but has otherwise used a general diet with care. For the past six months since conditions have been worse, has lived on eggs, toast, rice and broth, as other foods seemed to aggravate her trouble. The bowels have moved at least four times daily, the movements being ropy and frequently containing mucus. When she is worse the movements are watery with much mucus. Patient lived for fifteen years in the Philippines, returning three years ago. While in the Philippines, about seven years ago, she was known to have been suffering from amoebic dysentery. This is proved to have been cured.

P. I. At the time of admission to the hospital, December 5, 1918, patient was having from 8 to 15 movements daily, associated with gas, watery material and mucus; also complaining of more or less constant pain in rectum, especially at night. Patient entered hospital determined that she must undergo a serious intestinal operation of some sort for relief of her present condition, her feeling being that anything would be preferable to her then constant state of misery and inability to carry on her normal daily life at home.

P. E. In general, negative, except that patient is very thin. Abdomen generally tympanitic with general soreness but no local tenderness. Skin dry, discolored.

Patient first seen by writer on December 21, 1918. Abstract of notes follows.

December 30. Has been on a special diet, omitting all eggs, meat and fish, for past five days. In general, improved. Less bowel frequency, less pain and rectal tenesmus, also less gas. Yesterday there was a slight food upset, but patient is better today.

January 4. Steady improvement. Now has no abdominal discomfort and little gas. Sleeps much better. Appetite satisfactory. Bowels have moved only once daily for the past forty-eight hours instead of nine or ten times daily. Feels stronger and much more cheerful. Given exercises to enlarge lower thorax, also general developmental exercises. Given massage daily.

January 7. Feels well, good appetite, sleeps well, bowels regular once daily, normal in quantity and appearance, walking about, desires to go home.

January 24, 1919. Discharged to go home, improved.

This patient when first seen stated emphatically that it was impossible for her to eat ordinary vegetables. Within two weeks of the time of alteration of diet, she was eating everything allowed on her prescribed diet, which eliminated, practically speaking, only eggs, meat and fish.

At the time of my first conversation with the patient, she understood me to say that because I did not wish her operated upon, her case was hopeless. It took several days to disabuse her of this idea, so firmly fixed had it been in her mind that she must be operated upon in order to obtain any relief from her sad condition.

Two weeks after being first seen, patient said the change produced in two weeks "is so great it seems as though a miracle had been performed." She expressed profound and almost embarrassing gratitude.

She responded in general very readily to mental or nervous treatment. This is shown by an incident which happened on the day when it was first attempted to give her some exercises which would tend to enlarge her lower thorax. After three or four long breaths she suddenly complained of terrific pain over the whole lower thorax, especially in the epigastrium. This was associated with a semi-hysterical spasticity of the fingers. The mechanism of this finger "tightness" from which she had suffered for years was explained to her. It disappeared almost before the explanation was completed, and it never returned. The epigastric pain, following exercises, persisted violently for twenty-four hours. Exercise was resumed after forty-eight hours without further incident, and at the time of leaving the hospital, patient's posture had already become much improved.

About six months after returning home, this patient informed me that for the first time for years, she had known what it was to be able for weeks at a time to run up and down stairs at will, practically without fatigue, and free from her long-standing intestinal ailment.

Several months after her leaving the hospital, she suffered from an acute food upset. She was able, however, to overcome this herself by a strict application of the dietary system which she had been taught, and at last accounts she was back again at her daily work feeling "better than for many years."

Summary, Case I.

1. An emaciated elderly woman who had suffered from recurrent intestinal attacks since childhood, entered hospital seeking operation in a spirit of desperation at her state of chronic invalidism as evidenced by extreme rectal tenesmus, abdominal pain, and more or less chronic dysentery to the extent of 8 to 15 dejections daily. She sought relief from a condition summed up by her as "hopeless invalidism" in which she was a burden to herself and to her husband.

2. Treatment: Diet, exercise, advice, massage.

3. Results:

a. After fourteen days, bowels moving once daily, practically no gas, no abdominal discomfort, no rectal tenesmus, mental state more placid.

b. After one month, eager to go home, discharged from hospital. Able to do her own housework and carry on the daily routine of her life without undue fatigue.

c. After six months, no relapse.

Case 2. Miss E. V. N., nurse, white, aged 24, on duty at the Walter Reed General Hospital, was admitted as a patient on April 24, 1918.

F. H. Negative except that the patient was one of a large family and for some years had felt the necessity of earning her own living.

P. H. The only childhood complaint remembered was diphtheria. The patient was operated upon for appendicitis when nineteen years of age, at which time a dermoid cyst of the right ovary was also removed. The following year, patient for several weeks suffered from severe headache, nausea, and vomiting; she had to go to bed on account of severe darting pains in the hepatic region, and then remained off duty for ten weeks on account of constant dull pain following the acute pain just mentioned. This radiated backward to the side and up toward the right scapula. Two years ago patient was operated upon for correction of abnormal nasal septum and turbinated bones. In the same year, while nursing a case of delirium tremens, she was kicked in the back and at this time a kidney is said to have been torn loose. The patient wore a binder for one year, and has not been troubled by kidney pain since.

P. I. In January and February of the present year, patient was in the Walter Reed Hospital suffering from meningitis contracted while on duty. She recovered well and soon went back on duty. She felt well enough until April tenth, when she became nauseated and vomited. Her temperature varied between 100-102. There was at this time severe cutting pain in the hepatic region. Patient tried to continue on duty. The pain radiated to the side and back as in the attack she had had in 1914; in fact, the symptoms are said to have been very similar to those in the previous attack.

Patient again came on sick report on April 21. At this time the temperature was recorded as 100, pulse 95, respiration 24. The chief complaint was of dull pain in the hepatic region radiating to the side and back, increasing on action, especially on turning in bed. Pain at this time was pulling or tearing when sitting or standing very long. Patient stated upon being admitted that she could not sleep night or day on account of itching all over her body, although there was no sign of skin trouble. There was habitual constipation and the stools were at times "pasty white."

P. E. Patient rather short in stature, well developed, somewhat obese. A very pallid color of the entire skin. Liver slightly enlarged and tender to palpation and percussion. Local tenderness over the gall bladder. Examination otherwise negative.

One month after admission, there had been no improvement in general condition. Patient came under the personal care of the writer on May 24, 1919. Abstract of notes follows:

May 28. Much less gas and pain; no vomiting; sleeps better;

June 9. For three days has had a right mastitis without temperature.

June 15. Is again doing well; marked improvement in developmental exercises.

June 30. General condition better; local pain persists.

July 12. Increase of local pain and increase of mucus in stools; otherwise improved.

July 18. Has had severe menstrual pain and active pain over gall bladder.

July 21. Much improved in every way.

July 28. Slight return of pain in gall bladder region associated with distention of caecum by gas.

July 31. Up and about. Feels much stronger, but frequent loose movements for past forty-eight hours.

August 31. Very slow gradual improvement in bowel condition. Now has no complaint of pain aside from menstrual distress. Oil enema (four ounces being retained at night) being used with apparent good effect. Improvement in general condition and strength slow but continuous. An occasional unexplained rise in temperature to 99-100 lasting one or two days.

September 7. For two weeks has had persistent daily headache, unilateral from eye to occiput on right side; unexplained. No abdominal distress, bowels regular, movements somewhat light colored. Sleeping well, and getting about with constantly less effort. In general, condition satisfactory but patient far from well and can never be fit for Army duty. Would require from three to four months furlough and would then be unable to stand hard work.

September 9. Free from headache today.

September 16. After an interval, remarkably free from intestinal pain of any sort, in which patient was up and about for a week or two dressed, pain in the right lower quadrant reappeared. This was associated with irregular menstruation which persisted only one day, followed by relief of pain. Patient then continued favorably until September fourteenth, when the abdominal pain recurred in the old area, right upper quadrant, just outside of gall bladder area, radiating upward and outward toward the right axilla. Temperature to 101 for three days. White count 7000. Mucus and streaks of blood in stools.

September 17. Pain much less acute and patient quite comfortable though still sore and tender, the pain being more localized to the ascending colon and hepatic flexure region. At noon the pain suddenly became violent, same in character as two or three months ago, requiring morphine gr. ½ for relief.

September 22. Patient yesterday afternoon had a white count of 17,000 and temperature of 101.6, but today temperature is down to 99. Patient still very uncomfortable. Morphine gr. ¼ twice in the night required for pain and lack of sleep. Vomited green liquid several times and has had several spells of hiccough.

September 25. Pain slowly subsiding. Temperature has not been over 100. Very exhausted, marked herpes of lips.

October 1. Much improved but pain persists.

October 5. To have an exploratory laparotomy when influenza epidemic is passed. Patient unable to do any concentrated work, as making gauze masks, without its being followed by an undue nervous exhaustion, tremor and increase of local abdominal pain. This pain follows the course of the ascending and transverse colon.

October 9. Condition unchanged. Slight exertion provokes pain. Fairly comfortable on light diet, flat in bed.

October 15. Has had three days of discomfort associated with nausea. Sharp intestinal pain in gall bladder region associated with mucus in stools. Today fairly comfortable.

October 20. Greatly improved.

October 28. Out of bed for short periods the past three days, the first time in over one month. Much brighter, and more cheerful than for a long time. Today no great tenderness except in a small spot near gall bladder area.

November 1. Steady improvement.

November 8. Better than for weeks past. Almost no local tenderness.

November 10. Transferred for exploratory laparotomy; question of intestinal adhesions, with possible involvement of gall bladder.

November 12. Operation, Major Hill. A band of adhesions found running from the lower ascending colon to the middle third of the transverse colon, involving an hepatic loop of the upper ascending colon. No other abnormality noted. Adhesive bands cut, restoring contour of colon approximately to normal.

(The operation was short and satisfactory, the patient being returned to bed with practically no post-operative sequelae.)

December 10. For four days patient has been up and about after an uncomplicated convalescence.

December 15. Discharged to duty.

These notes have been quoted extensively to show the erratic progress of the case during the approximately six months the patient was under my observation until the time of her operation. It may be said that six months was a long while to wait for operation in a case of this sort. The answer is that no one would take the responsibility for making a diagnosis. For example, an unsuccessful attempt had been made to fasten the whole series of symptoms upon neurasthenia pure and simple. This appeared to me to be nonsense, although the patient was obviously high-strung. Furthermore, in the course of the months that this patient was under control of the writer, it was possible to obtain a very considerable degree of physical development, and largely to increase the mental poise. For weeks previous to the latter half of October, the writer had felt that there was some serious mental commotion going on which would probably come to the surface if allowed adequate time. The patient had previously refused to yield any information to a psychologist.

On October 26, after a two-hour struggle with herself, the patient unbosomed herself of a minor sexual irregularity which although of no great consequence in itself, had seemed very terrible to her, and to which she had looked back with horror ever since early puberty. There was in addition a broken engagement of more recent occurrence. It was possible to get the patient in a perfectly comfortable frame of mind in reference to these two events. The result was startling. The entire nervous mask fell away. In forty-eight hours the patient had become almost placid in temperament. She continued constantly and quietly cheerful throughout the remainder of her stay in the hospital.

Had not the mental factor been eliminated, and had not some degree of physical improvement been obtained, it is very probable that the operation might not have effected a cure. As it was, the operation was in itself rapid and successful, the patient came through with no loss of mental poise, and was soon almost upon her feet again. The word "almost" is used advisedly. Possibly on account of the writer's being at the time away on an inspection trip, the patient was allowed to be placed on active duty while awaiting her discharge from the Army. The discharge was held up, and the amount of duty was not properly regulated. As a result, the patient arrived home in a somewhat exhausted condition. After a month or two of rest, she has, however, been able to take up district nursing, and she has recently written that she is practically free from all gastro-intestinal complaints. Her only cause of present distress is fatigue from physical over-exertion, for, as she says, "Mental worries are a thing of the past."

Summary Case II.

1. A young woman of good physique, exhausted from over-work, suffering from recurrent intestinal attacks accompanied by fever, abdominal pain, and mucus in the stools.

2. Treatment: Diet, exercises, advice, massage, operation.

3. Results:

a. Marked increase of physical and mental poise with relief of mental distress obtained in the six months preceding operation.

b. Operation for adhesions successful.

c. Uninterrupted recovery; discharge from hospital one month after operation.

d. After discharge from the Army, returned home; able to resume district nursing work and to keep it up without return of gastro-intestinal distress.

DISCUSSION.

The above two cases represent two types of mental disturbance which must be taken into account in the treatment of the chronic intestinal invalid. It is presumable that success would not have been obtainable in either of these cases without adequate attention to the mental factor.*

In the first case mentioned, the mental commotion present was due to a summation of all sorts of long-continued incoming stimuli which had greatly worn down the patient's resistance, so that she was in a state of general unstable nervous equilibrium. Equilibrium was restored by a process of general reëducation as well as by removal of the local intestinal irritation.

In the second case, almost the entire nervous commotion present was due to two specific causes. On removal of these two causes of irritation, the patient ceased to be nervous. It is certain that this had much to do with her uneventful recovery from operation.

SUMMARY.

1. Two case histories have been presented, illustrating two distinct types of mental commotion often encountered in the treatment of the chronic intestinal invalid. In one case the mental commotion was due to a summation of general causes. In the other case, the mental commotion was due to two specific factors.

2. In both of the cases above presented, relief of the mental commotion proved a very important factor in the recovery of the patient.

CONCLUSION.

Consideration of the mental factor is a prerequisite for the successful treatment of the chronic intestinal invalid.

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* Both of these cases were heard from by letter about January 1, 1920. Both patients reported being in good health.

THE SPECIFIC DIAGNOSIS AND TREATMENT OF ACUTE LOBAR PNEUMONIA.*

By Lesley H. Spooner, M.D., Boston.

Since the Hippocratic days of counter-irritants and blood-letting in the treatment of pleuro-pneumonia, no real progress along this line took place until the last decade. The discovery of the *Diplococcus pneumoniae* by Fraenkel led to hopes in the direction of a specific treatment. Further study served only to confuse the situation, since the organism was so frequently demonstrated on the healthy mucous membrane, and, furthermore, necropsy often revealed organisms other than the diplococcus of Fraenkel as the evident etiologic factor of typical pneumonia.

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* Read before the Cambridge Medical Improvement Society, December 22, 1919.

One fact remained, however, which has lead gradually to an elucidation of the problem—this organism, though often saprophytic, has been found as the causal factor of acute lobar pneumonia in 85% of cases of the endemic disease.

Dochez and Gillespie,[1] Avery and Dochez,[2] and Cole[3] have shown that although strains of this organism differ slightly morphologically, the group may be divided into four distinct types, according to the action of sera of immunized animals upon varieties of the pneumococcus. The first three types are considered "fixed," since in each instance a specific agglutinin and precipitin can be produced in lower animals which serve to differentiate by biologic reactions Types I, II, and III. Type IV is represented by a more or less heterogeneous collection of organisms which by specific serologic tests do not fall into the first three groups, yet by morphology and bile solubility can be classed with no other organisms.

The methods for determining the types are numerous. That of Blake,[4] which depends upon the susceptibility of the white mouse to the pneumococcus has been most successful in the hands of the writer. The scarcity of that animal, especially during the recent war, led Avery[5] to devise a special culture medium which has served as a substitute for the animal. The more direct method of Krumwiede[6] was found satisfactory in a smaller percentage of cases; that recommended by Loewe, Hirshfeld, and Wallach[7] is deserving of note.

That precipitins may be demonstrated in the urine has been pointed out by many observers. Quigley found such bodies in cases infected with the fixed types in 81%. The appearance of the specific substance does not occur early enough in the disease to warrant the substitution of this for other methods.

In any instance sputum, derived from the lower air passages—when possible the typical sputum of crupous pneumonia—should be collected in any sterile receptacle and delivered without delay to a competent diagnostic laboratory. The diagnosis of fixed types should be made not later than 24 hours after the first consultation. In rare cases where sputum is unobtainable recourse must be had to blood cultures and urine examination.

A review of literature shows the proportion by types as indicated in Table I. The average, based upon the examination of 2980 cases of lobar pneumonia, is of great interest and importance. It will be noted that my figures, based upon 1103 observations do not differ radically from the average in Types I and III. Type II is found less frequently and Type IV more often than by other observers.

Alexander[11] notes a variation in the percentage of types from year to year. In my series, which covered observations in the Laboratory, Base Hospital, Camp Devens, Mass., during 18 months, marked variation in type was found, corresponding to small epidemics. One or more such outbreaks were found in each of the three fixed types during this period, which were of sufficient size to cause a marked variation in monthly percentages.

As a further element which serves to upset this law of averages, the habitat of the individual appears to influence the type of the disease. R. Richardson[18] shows that of 46 rural cases examined 70% presented Type IV, the remaining 30% only being fixed types. Such a marked difference might have influenced my findings, which were based upon a much greater proportion of rural than urban troops.

Park and Chickering,[19] working at Camp Jackson, demonstrated, on the other hand, a much higher percentage of Type I infection among Porto Rico laborers, than among either white or black troops, the difference being an increase almost 70 times over the former and seven over the latter. A similar variation from the average is reported by Mitchell,[20] among infants who showed only 25% infection by fixed types.

During the "influenza epidemic" the type percentage of complicating pneumococcus infection showed considerable variation. Lamb[9] found fixed types in only 25% and Beckler[21] in 47%. During this period at Camp Devens,[22] although the percentage of fixed types was lower than previously found, a sufficient number of Type I cases developed to support the rule that all cases of pneumonia, especially of the lobar type, should receive immediate careful laboratory investigation.

It may be stated, as a summary, that the Type I organism is found in typical acute lobar pneumonia in about 30% of cases. These figures are influenced by the habitat of the individual and the existence of intercurrent disease. A rational explanation of the latter might be that the fixed type disease is produced by contact and Type IV often by autoinfection.

TREATMENT.

A consideration of the general treatment of this disease is not within the scope of this paper. The specific or serologic treatment is alone of interest today, since along these lines the only real progress has been made.

Kyes,[23] Nichols,[15] McClellan,[10] and Camac[13] report favorable results from the use of polyvalent sera. It has been shown by Cole and others[24] that a serum of sufficiently high titre to be of therapeutic value could not be obtained from Type II or III organisms. It is, of course, obvious that no serum can exist to combat the heterogeneous group of organisms comprising Type IV. Thus in only 30% of cases could a polyvalent serum have any specific value. The intravenous administration of such large quantities of serum as are necessary in the treatment of pneumonia is accompanied by more or less severe constitutional reactions, which can be justified only where a specific benefit can be expected.

It would appear that the small percentage of cases in which polyvalent serum can be of service and the relatively large amount of inert sera contained in such a mixture are sufficient contraindications for its use.

Specific treatment of Type I pneumonia by Type I serum is, on the other hand, distinctly indicated.

The following routine, advised by Cole,[24] was employed at the Base Hospital, Camp Devens, Mass. Upon submission to the laboratory of a satisfactory specimen of sputum, every case of acute lobar pneumonia received an intracutaneous injection of 0.02 cc. of horse serum diluted to 1:10 with salt solution. A similar injection of salt solution served as a control. This test to determine sensitization is of great importance. The site of each injection immediately presents a wheal, which soon disappears. Sensitization is indicated by a distinct indurated wheal, surrounded by an area of hyperaemia, which appears after a few moments. The test is considered negative when no reaction is found an hour after injection. To safeguard against accident, even when the latter reaction is negative, it is wise to administer a desensitizing subcutaneous dose of 0.5 to 1 cc. of horse serum, upon completion of the sensitization test. Following this routine procedure it is customary to start the intravenous administration of serum as soon as the diagnosis of the type has been made. Ninety to 100 cc. of serum, diluted with equal parts of sterile salt solution prepared from freshly distilled water, is warmed to body temperature and injected into the median vein under the usual aseptic precautions for intravenous medication. The gravity method is usually employed, although the syringe and three-way stop-cock has given good results at Camp Devens. In either case care should be taken to maintain the temperature of the fluid during its introduction, which should consume at least 20 to 30 minutes. Careful observation of the patient during the administration of the first 10-15 cc. will often obviate serious trouble. At the appearance of cyanosis, pallor or dyspnoea the administration should be discontinued and resumed only on the disappearance of these threatening signs. Treatment should be given at eight-hour intervals until a distinct improvement in the patient's condition is noted.

When the sensitization test is positive or when the patient gives a history of asthma or other vasomotor difficulties, extreme care should be taken in this treatment. In that case Cole recommends the subcutaneous injection of 0.025 cc. of serum. The subsequent doses, given at one-half hour intervals, should be double the previous dose until 1 cc. is reached. At that point 0.1 cc. may be given intravenously and that dose doubled at half-hour intervals. After a total of 25 cc. has been reached in this manner, 50 cc. may be given after a four-hour interval and the regular dose after six to eight hours. The appearance of signs of anaphylaxis should cause the suspension of treatment for two to four hours and the resumption at a dose lower than that which produced the reaction.

REACTION.

There is, unfortunately, no relation between reaction and curative power of the serum. One-half to one hour following the injection the patient is likely to present the so-called thermal reaction, characterized by chill, cyanosis and a distinct elevation of temperature. This is followed in a few hours by a fall in temperature, profuse sweating and relaxation. This apparently precipitated crisis may often be permanent and the subsequent convalescence be uneventful. Often, however, the temperature rises again in four to eight hours and further treatment is indicated. In a certain number of cases symptoms of anaphylaxis may develop very shortly after serum administration. The symptoms are those noted previously as danger signals during the injection. The patient generally presents cyanosis, dyspnoea, and collapse. The immediate subcutaneous injection of 0.6 cc. of 1:1000 adrenalin is generally sufficient to give relief. Although this complication is not common, it is never safe to proceed with the treatment, unless this preparation of adrenalin is at hand.

Serum sickness may and generally does follow in the course of seven to ten days. It varies in severity from occasional urticarial wheals to universal erythema. Arthralgia may be a troublesome complication. The treatment of this condition is symptomatic.

PROGNOSIS.

Cole[25] states that in every 100 cases of lobar pneumonia thirty-five are due to Type I and ten die; thirty are due to Type II and ten die; ten are due to Type III and six die, and twenty-five are due to Type IV and four die. Just as the incidence by types varies according to seasonal and other influences, so apparently does the mortality of the different forms of the disease. Although Type III is admitted to be a very severe form, Cecil[26] reports from Camp Upton a high mortality from both Types II and IV. Alexander points out similar yearly variations in mortality. In the Camp Devens series high mortality existed very frequently in Types II and IV. At one time a small epidemic of Type III cases presented a relatively low mortality. The intercurrence of other disease processes certainly plays an important rôle in prognosis. During the "influenza epidemic" the mortality from pneumonia showing Types I* and II was greatly increased.

Although variations in mortality of the types not treated by specific methods is of general interest, yet that of Type I alone is of importance in this discussion. It is generally admitted that untreated cases of this class present a mortality between 25 and 32%. In a special series studied at Camp Devens[22] during the influenza epidemic we found a mortality of 43% among those treated with low grade commercial serum.

The most reliable results of this treatment are furnished by Cole.[24] In a series of 107 cases of this type, treated as outlined, the mortality was reduced to 7.5%. In the series at Camp Devens, during the influenza epidemic, noted in the preceding paragraph, the mortality of such cases treated with a high titre serum was reduced from 43 to 7%. In addition to these striking reductions in mortality, it is certain that the administration of serum causes the sterilization of the blood and a limitation of the spread of the process. It is unfortunate that there is not a corresponding reduction in the number of complications.

The specific treatment of Type II pneumonia is still in the experimental stage. Cecil[26] reports favorable results. In a small series at Camp Devens, the results were encouraging. Personal experience and the review of literature reveals insufficient data to warrant further discussion of this method of treatment.

CONCLUSIONS.

1. Thirty per cent. of cases of acute lobar pneumonia are due to Type I organism.
2. An immediate diagnosis of type is essential for the early administration of specific sera.
3. The use of polyvalent sera is irrational and unjustified.
4. Careful use of Type I serum in Type I pneumonia is safe.
5. It has reduced the spread of the disease process and the mortality to a sufficient extent to indicate its universal application.

TABLE I.

	Total Cases	Type I	Type II	Type III	Type IV
Lamb[9]	104	41%	30%	8%	21%
McClellan[10] ..	311	11.8%	18.7%	4.1%	65.2%
Alexander[11] ..	104	24%	21.2%	11.6%	43.2%
Hart[12]	96	27%	25%	8%	19%
Camac[13]	81	32%	22%	13%	33%
Kolmer[14]	500	33%	33%	13%	20%
Nichols[15]	150	56%	22%	27%	20%
Cole[16]	223	35%	34%	10%	21%
McClelland[17] .	113	29.2%	9.7%	4.4%	56.7%
Richardson[16] .	195	31%	26%	7%	42%
Spooner[22]	1103	25%	12%	14%	49%
Average ..	2980	29%	21%	11%	39%

REFERENCES.

[1] Dochez and Gillespie: J. A. M. A., 1913, 61, 727.
[2] Dochez and Avery: J. Exp. Med., 1915, 21, 114.
[3] Cole: N. Y. M. J., 1915, 101, 1 and 59.
[4] Blake: J. Exp. Med., 1917, 26, 67.
[5] Avery: J. A. M. A., 1918, 70, 17.
[6] Krumwiede: Med. Rec., 1918, 94, 613.
[7] Loewe, Hirshfeld and Wallach: J. A. M. A. 1919, 73, 170.
[8] Quigley: Trans. Chic. Path. Soc., 1915-17, 10, 283.
[9] Lamb: J. A. M. A., 1919, 72, 1133.
[10] McClellan: J. A. M. A., 1919, 72, 1884.

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* Those treated with low titre serum.[22]

[11] Alexander: Boston M. & S. J., 1917, 177, 874.
[12] Hart: Med. Rec., 1919, 95, 895.
[13] Camac: Am. J. Med. Sci., 1918, 156, 887.
[14] Kolmer: Med. Rec., 1918, 93, 742.
[15] Nichols: Mil. Surg., 1817, 41, 149.
[16] Cole: Trans. Assoc. Am. Phys., 1915, 30, 230.
[17] McClelland: Cleve. Med. J., 1918, 17, 226.
[18] R. Richardson: J. A. M. A., 1919, 72, 863.
[19] Park and Chickering: J. A. M. A., 1919, 73, 183.
[20] Mitchell: Penn. M. J., 1917, 20, 343.
[21] Beckler: Month. Bull. Mass. Dept. Health, 1918, 5, 383.
[22] Spooner, Sellards and Wyman: J. A. M. A., 1918, 71, 1310.
[23] Kyes: J. Med. Res., 1918, 33, 495.
[24] Avery, Chickering, Cole and Dochez, Mon. Roch. Inst. Med. Res., No. 7, 1917.
[25] Cole: Trans. Col. Phys. 9917, 39, 191.
[26] Cecil: Med. Rec., 1918, 93, 947.

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Book Reviews.

Studies from the Rockefeller Institute for Medical Research. Volume XXXI.

The Rockefeller Institute for Medical Research has published in Volume XXXI results of investigations conducted at the Rockefeller Institute. Among these reports there are a number which merit especial attention. Dr. Noguchi has contributed three interesting articles, in the first of which he considers the results of his further study on the cultural conditions of leptospira (spirochaeta) icterohaemorrhagiae; in the second he discusses the question of the survival of leptospira icterohaemorrhagiae in nature, and reports his observations concerning microchemical reactions and intermediary hosts. In his third article, "A homohemolytic system for the serum diagnosis of syphilis," Dr. Noguchi has described the principle of the method, the mode of utilization of human complement for the serodiagnosis of syphilis, varieties of irregular reactions and their adjustment, and the practical application of the test.

Two papers have been contributed by Dr. Simon Flexner, Dr. Harold Amoss, and Dr. Frederick Eberson. The first, "Physiological stimulation of the choroid plexus and experimental poliomyelitis," by Flexner, Amoss, and Eberson, supports the theory of the stimulating effect of intravenous injections of extracts of choroid plexus in the secretions of the cerebrospinal fluid. The second paper, by Flexner and Amoss, considers the passage of neutralizing substance from the blood into the cerebrospinal fluid in actively immunized monkeys.

The reports of Jacques Loeb, M.D., are valuable contributions to experimental biology. The first describes the stoichiometrical character of the action of neutral salts upon the swelling of gelatine; in the second, he illustrates the law controlling the quantity and rate of regeneration. His other studies include "The influence of neutral salts upon the viscosity of gelatine solutions," "The influence of neutral salts, bases, and acids on the precipitability of gelatin by alcohol," and "The origin of the conception of physiologically balanced salt solutions."

Of interest from the point of view of animal pathology is "Coccidiosis in Young Calves," by Dr. Theobald Smith and Dr. W. H. Graybill, who discuss the general characters of the disease and its pathology, and cite brief notes on individual cases.

In addition to these articles, this volume contains many other studies of value to medical research.

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Cerebrospinal Fluid. By Abraham Levinson, B.S., M.D. St. Louis: C. B. Mosby Company. 1919.

The publication of this volume, "Cerebrospinal Fluid," has added to medical literature a book of unusual and timely interest. The study of body fluids, particularly of cerebrospinal fluids, has proved in recent years to be of great value in the diagnosis of many diseases and in the determination of physiologic and pathologic processes in the body. In this book the character of the cerebrospinal fluid is considered in health and in disease. The author has presented the theories of a number of investigators on the function and origin of this fluid. Of great practical value is the discussion of technic in obtaining the fluid and in examining it after it has been withdrawn. A chapter on lumbar and cranial puncture, illustrated by tables and plates, describes in careful detail the methods of procedure and the dangers to be guarded against. The changes which occur in the cerebrospinal fluid in various diseases,—such as uremia, diabetes mellitus, epilepsy, lues, psychoses, encephalitis, meningism, and poliomyelitis,—are considered as significant for diagnostic purposes and as showing their relation to the clinical manifestations of the disease. The methods of treatment which are described include those definitely established and those still in the experimental stage. In order to promote further scientific research on this subject, the author has suggested a number of lines of investigation which should be helpful in solving some of the contested problems of medicine. The book is excellently illustrated by plates, some of which are colored, and by tables.

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INVESTIGATION OF FACTORIES AT NIAGARA FALLS.

In many forms of occupation the worker is surrounded not only by imminent danger of accident, but also by an atmosphere detrimental, often fatal, to his health and well-being. The Public Health Service has investigated conditions in a number of factories in the United States, and has disclosed dangers and instituted remediable measures. A recent investigation of conditions at Niagara Falls, in a factory engaged in the manufacture of abrasives, chemicals, gases, electrodes, carbons, metals, and alloys, disclosed the fact that over two hundred million tiny particles of dust, as sharp as ground glass, are breathed into the lungs and air passages with every cubit foot of air. These dusts are shown by photomicrographs to be exceedingly sharp and jagged; they are never expelled from the lungs, and are practically insoluble. Work under such conditions is conducive to respiratory diseases and involves a real health hazard.

The investigation conducted at Niagara Falls made evident the fact that in all of the factories the laborers were exposed to dangers which eventually would incapacitate them for further service. From the point of view of good health, it is fortunate that over sixty per cent. of the laborers in these factories seek new employment monthly, with the result that they suffer less from their temporary exposure than do those who remain at the same work for longer periods. As a result of the industrial survey, means have been devised for removing the dust from the air and minimizing the hazards from fumes and poisonous gases. It is encouraging to know that although the installation of such devices is expensive, they have been put into immediate use by factory managements.

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REGULATIONS FOR THE RESTRICTION OF RATS.

The vigilance with which our ports are guarded against the introduction of plague by means of infected rats is a matter of serious concern to health officials and the general population. In pursuance of his duty to make investigation of all causes of sickness in the city or on vessels within the harbor and to make regulations to prevent the importation of disease, the Health Commissioner of Boston had promulgated recently the following regulations, with a view to the prevention of the introduction of plague into Boston:

1. The owner, agent, master and consignee of any vessel which is laying at any wharf within the limits of the City of Boston shall take such measures as may be necessary to prevent, and shall prevent any garbage, offal or other refuse which may furnish food for rats from being thrown overboard from such vessel or from being deposited on or about any wharf, except in rat-proof covered metallic receptacles, and shall take such measures as may be necessary to keep such receptacles covered and cared for, at all times, so as to prevent rats from gaining access to their contents.

2. No owner, agent, master, or consignee of any vessel, nor the owner, agent, or superintendent of any wharf shall deposit or store, or permit to be deposited or stored, or to accumulate, on or about any wharf, or in or about any building adjacent thereto, subject to his control, any foodstuff, refuse or other material, in such manner as to furnish a food supply or breeding place for rats, or otherwise than may

in any instance be prescribed by the Health Commissioner or his legal representative; and the owner of every wharf shall make provision, subject to the approval of the Health Commissioner, for the prompt and regular removal of all garbage, offal or other refuse from the wharf and land or premises adjacent thereto under his control.

3. In case any vessel shall arrive at the port of Boston from a port regarded by the United States Public Health Service as infected or possibly infected with the plague, and shall be permitted by the United States quarantine officials to come to a wharf in the City of Boston under a conditional practique for the purpose of discharging or taking on passengers or cargo, the master of such vessel, and the owner, agent, and superintendent of any wharf at which such vessel may lie, shall observe the following conditions:

The vessel shall be kept breasted off at least seven feet from the cap sill of the wharf.

All lines leading from the vessel to the shore shall be so guarded by effective rat guards or other devices as to prevent rats from reaching the shore by means of such lines. All freight gangways leading from the vessel to the wharf or shore shall be removed and kept down when not actually being used for the loading or discharge of cargo. Passenger gangways shall be removed when not kept constantly lighted and guarded so as effectually to prevent rats from reaching the shore by this means.

If it shall come to the knowledge of the owner or superintendent of the wharf or to the master or chief officer of a vessel that rats are reaching the shore in cargo that is being unloaded he shall immediately report the fact to the Health Commissioner of the City of Boston, and the owner or superintendent of the wharf and the master and chief officer of the vessel shall make such arrangements with the employees under their control and with the United States Customs Officers as will insure the prompt reporting to the said owner, agent, master or chief officer of the fact that rats are so being brought ashore with the cargo.

The maximum penalty for violation of any regulation promulgated under Section 65, Chapter 75, of the Revised Laws, is $100.

The enforcement of the above regulations will be an important factor in controlling the introduction of bubonic infections. There still remains to be considered, however, the problem of eliminating rats already infesting the city. In this connection the suggestions of a representative of the Woman's Municipal League of Boston merit consideration. The rats already swarming about our wharves are a continual menace to the health of the people, and will continue to be an active source of danger until they are eliminated by the destruction of their nesting places and the removal of their food supplies. In order to accomplish this, the League has suggested the following regulations: that plank walks and plank area coverings be prohibited; that rubbish shall not be allowed to accumulate in yards or other places, and that where it is necessary to store loose materials it shall be piled on platforms two feet above the ground; that all basement windows and other basement openings shall be screened or otherwise made rat-proof, and that bulkheads be kept closed except when in actual use; that stables shall be provided with metal-lined bins within the area walls for the storage of manure, such bins to be properly vented; that all garbage shall be placed in water-tight metal receptacles with close fitting metal covers; that all food products kept for sale shall be so protected as to prevent rats from gaining access thereto and coming in contact therewith; that all table feed, excepting hay, shall be kept in metal-lined bins so constructed as to be rat-proof; and that proper handling of grains, poultry, and food products at freight terminals and in transit through city streets be so accomplished as to prevent the attraction of rats.

In addition to these suggestions, the Woman's Municipal League has advocated a return to the practice of the laboratory examination of rat bodies in order to determine whether or not the rats trapped by officials are infected. It is hoped that these proposed regulations and suggestions for checking the introduction and spread of disease by infected rats will prove to be effective in eliminating a serious menace to the population.

MEDICAL NOTES.

Results of Smallpox Vaccination in France.—The report of Dr. A. Fasquelles, director of the Service Anti-variolique de l'Armée, which has been submitted recently to the French Academy of Medicine, states the results of his work in protecting the French Army from smallpox during the war. He has made the following announcement:

"During the war of 1870-1871 more than 120,000 French soldiers were infected with smallpox, and more than 25,000 died. During the recent war only 12 cases occurred in the metropolitan French Army with only one death. This is the first time that a war has not been accompanied by a smallpox epidemic.

Appointment of Dr. Harold Pringle.—Announcement has been made of the appointment of Dr. Harold Pringle, lecturer on histology and assistant in the department of physiology in the University of Edinburgh, to the professorship of physiology in Trinity College, Dublin, to succeed the late Sir Henry Thompson.

BOSTON AND MASSACHUSETTS.

Week's Death Rate in Boston.—During the week ending January 31, 1920, the number of deaths reported was 306 against 291 last year, with a rate of 19.74 against 19.05 last year. There were 54 deaths under one year of age against 31 last year.

The number of cases of principal reportable diseases were: Diphtheria, 37; scarlet fever, 75; measles, 303; whooping cough, 90; tuberculosis, 40.

Included in the above were the following cases of non-residents: Diphtheria, 4; scarlet fever, 6; measles, 3; whooping cough, 3; tuberculosis, 3.

Total deaths from these diseases were: Diphtheria, 4; scarlet fever, 4; measles, 3; whooping cough, 7; tuberculosis, 18.

Included in the above were the following non-residents: Diphtheria, 2; scarlet fever, 2; tuberculosis, 1.

Influenza cases, 1603; influenza deaths, 25.

During the week ending February 7, 1920, the number of deaths reported was 408 against 301 last year, with a rate of 26.32 against 19.71 last year. There were 41 deaths under one year of age against 46 last year.

The number of cases of principal reportable diseases were: Diphtheria, 47; scarlet fever, 54; measles, 277; whooping cough, 88; typhoid fever, 1; tuberculosis, 29.

Included in the above were the following cases of non-residents: Diphtheria, 13; scarlet fever 16; measles, 1; whooping cough, 2; typhoid fever, 1; tuberculosis, 6.

Total deaths from these diseases were: Diphtheria, 4; scarlet fever, 4; measles 6; whooping cough, 4; tuberculosis, 29.

Included in the above were the following non-residents: Diphtheria, 2; scarlet fever, 1; tuberculosis, 3.

Influenza cases, 2859; influenza deaths, 66. Deaths from pneumonia, both forms, 92.

Infantile Paralysis Fund.—It has been announced that further contributions for the Harvard Infantile Paralysis Commission Fund are greatly needed to insure treatment for the paralyzed children during the coming year. Only a third of the necessary amount has been raised. Contributions have been acknowledged to the amount of $5,361.87.

Extension of Hospital Facilities in Needham.—Funds are being raised for the proposed new Glover Home and Hospital in Needham. The present building, given to the town by the late Mr. F. P. Glover, has been used as a hospital since 1912 and is inadequate for the needs of the town; it will be remodeled and used as a Nurses' Home and will be connected with the new structure by a corridor.

The new building will be of brick, one story high, one hundred and eight feet long, with a basement above ground, a slate roof, and two sun parlors running the entire length on both sides. It will have twenty-five beds, an operating room, a diet kitchen, a contagious ward, and an x-ray room. The estimated cost of this building is $60,000, of which $40,000 has been raised already by popular subscription.

Harvard Medical Society.—At a recent meeting of the Harvard Medical Society, held in the amphitheatre of the Peter Bent Brigham Hospital, Dr. D. N. Eisendrath spoke on "Anomalies of Bile Ducts and Vessels," and Dr. E. E. Tyzzer discussed "The Parasite of Black Head" in turkeys, with observations on the transmission of the disease.

Promotion of Dr. Fleming.—Dr. Joseph P. Fleming, 'of Winthrop, has been promoted to the rank of captain in the Dental Reserve Corps. Dr. Fleming was commissioned a first lieutenant in the Dental Corps July 2, 1917. Later he was assigned to the 54th Infantry, 6th Division, with which he went overseas. He was discharged from active service August 7, 1919. Dr. Fleming was born in Roxbury 26 years ago. He was graduated from the Harvard Dental School in 1916. He is the son of Mr. and Mrs. J. P. Fleming, and is a member of Winthrop Post, American Legion.

Vital Statistics in Massachusetts.—The twenty-eighth annual report of the Secretary of the Commonwealth announces a decrease in the number of births and an increase in the number of deaths for the year 1918. The returns show a total of 95,607 births, a decrease of 124 over the previous year, and 78,842 deaths, an increase of 22,214.

Hospital Salary Increases.—It has been announced that increases in the salaries for the two superintendents of both the Boston City Hospital and the Long Island Hospital have been recommended to Mayor Peters by the boards of trustees of these institutions. The City Hospital trustees have noted approval of raising the salary of Dr. John J. Dowling from $5,000 to $7,500 a year. This is the first increase in the salary of this position which has been made during the last thirty years. The infirmary department trustees have approved of raising from $3,500 to $3,800 a year the salary of Dr. Charles E. Donlan, superintendent of the Long Island Hospital.

Fitchburg Medical Society.—At a meeting of the Fitchburg Medical Society held on February 8, the Society formally and unanimously recorded a protest against the enactment of the proposed "Mothers' Maternity Bill."

NEW ENGLAND NOTES.

War Relief Funds.—The New England branches of the principal war relief funds have received contributions to the following amounts:

French Wounded Fund for the American Hospital at Rheims	$2,991,619.14
French Orphanage Fund	552,972.27
Italian Fund	319,823.33
Fund for Devastated France ..	179,711.26

Connecticut Death Rate.—The death rate in Connecticut for 1919 is said to be the lowest in that state since the year when vital statistics were first recorded. There was a total number of 18,228 deaths, a rate of 12.4 per one thousand of population.

There were 2929 deaths of children under one year, a death rate for infants of 87.2 per thousand. This also was the lowest rate on record among infants. The death rate for the preceding six years was: 1918, 19.4; 1917, 15.3; 1916, 15.6; 1915, 14.6; 1914, 15.1; 1913, 14.9.

Obituary.

SIR WILLIAM OSLER.

In the death of Sir William Osler we mourn the loss of the most eminent and beloved physician of the present century. Born and educated during his early life in Canada and matured in this country and in England, Dr. Osler, through a long period of devoted service, had endeared himself to his colleagues, pupils, and friends on both sides of the Atlantic. It has been seldom in the history of medicine that a man has won so completely and deservedly the admiration, love and homage of those with whom he has been associated; his influence on medical science and on the lives of others will remain a lasting monument to his personality and achievement. For an excellent estimate of his character and charm we are indebted to Dr. F. H. Garrison:

> "Essentially English in character, Osler had, through his forebears, Cornish and Spanish elements in his composition, easily sensed in the "hauntings of Celtism" in his ringing eloquent voice, the suggestion of the hidalgo in his slender, aristocratic figure, the clean-cut features and the tropical brown eyes. His was the longish head of the man of action, the active practitioner against disease and pain. Osler's warm glance and utter friendliness of manner told how naturally fond he was of people. He had the gift of making almost anyone feel for the moment as if he were set apart as a valued particular friend, and so became, in effect, a kind of universal friend to patients, pupils, and colleagues alike."

William Osler was born at Bond Head, Ontario, on July 12, 1849, the sixth son of the Reverend Featherstone Lake Osler of Falmouth, England, and Ellen Free, daughter of Thomas Pickton of London. His father went to Canada as a missionary and became eventually the Rector of Ancaster and Dundas, Ontario. In his early life, Dr. Osler came under the influence of a parish priest, Father Johnson as he was called, the founder and warden of the Trinity College near Toronto. It was he who influenced the boy to buy "Religio Medici," the second book ever owned by Or. Osler, and it was to him and to two other teachers,—Dr. James Bouell of Toronto and Dr. Palmer Howard of Montreal,—that he dedicated his "Principles and Practice of Medicine," and to whom he was indebted for many of the subtle influences which helped to mould his character. When his early school days came to an end, Dr. Osler went to Trinity College of Medicine, and in 1870 to McGill University, Montreal, from which he was graduated in 1872. After brief visits to Dublin, Glasgow, and Edinburgh in the following summer, he spent fifteen months in the study of histology and physiology at the Physiological Laboratory, University College, with Professor Burdon-Sanderson. It was at this time that he observed the working out of the English system, the essential feature of which was the ward work done by the student; here he had opportunities of seeing William Jenner and Wilson Fox, and of learning the fascination of out-patient teachings from Ringer, Bastian, and Tilbury Fox. He spent the autumn of 1873 in Berlin, where he studied under Frerichs, Hoffman, Riess, Ewald, and Traube, and found a medical clinic on a large scale on which he later modelled his own clinic at Johns Hopkins Hospital. During the first five months of 1874 he studied in Vienna in the clinics of Hebra, Bamberger, and Widerhoffer.

Upon his return to Montreal in September, 1874, Dr. Osler was appointed to the Chair of the Institutes of Medicine, which involved the necessity of delivering four sytematic lectures a week for the winter session, a method of teaching of which he did not approve. In addition to his teaching, he became deeply interested in pathology, through his connection with the *post-mortem* department of the Montreal General Hospital. He received an appointment as physician to the small-pox wards of the Hospital in 1875, and in 1878 he was elected honorary physician to the hospital. He then went to London to become a member of the Royal College of Physicians and devoted himself chiefly to clininical medicine. His own first clinical class was organized in the summer of 1879 and he spent the next five years in teaching physiology and pathology during the winter sessions and clinical medicine during the summer months. For four months in 1884 he stayed in Germany, chiefly at Leipsiz, studying pathology with Wiegert and clinical medicine with Wagner.

Sir William Osler's influence on medical education in this country began with his appointment in 1884 to the chair of clinical medicine in the University of Pennsylvania, Philadelphia, to succeed Dr. William Pepper. At this time he was, in his own words, quoted in the *British Medical Journal*, "a rich man, not in worldly goods, for such I have the misfortune —or the good fortune—lightly to esteem, but rich in the goods which neither rust nor moth have been able to corrupt—friendship, good fellowship, wide experience, and fuller knowledge." The next five years of his life were devoted primarily to teaching, giving his own life and experience as an inspiration to the students with whom he worked. At the University the teaching was conducted chiefly by lectures and the theatre clinic; there were ward classes for physical diagnosis, no clinical clerks, and a great number of theoretical lectures. Dr. Osler organized a small clinical laboratory,—a new departure in the method of teaching medicine at that time. After a period of five years, he was elected to the Chair of the Principles and Practice of Medicine in the Johns Hopkins University, Baltimore, and was appointed physician to the Johns Hopkins Hospital, where he assisted in the organization of the clinical work and teaching, establishing for the first time in this country the principle of hospital units, each in charge of a director. For several years, because of lack of funds, only post-graduate instruction could be given, for a medical school had not been opened. It was a source of great pride and satisfaction to Dr. Osler that he was able thus to assist in the organization of the hospital and in the introduction of English methods of practical instruction. He desired particularly to be known as one who had taught medical students in the wards. His ambition was to build up at Johns Hopkins a great clinic, conducted by a professor who should be assisted by an organized body of assistants and house-physicians, for the purpose of teaching medicine not by didactic lectures but in the wards and in the laboratory. The *British Medical Journal* makes the following statement in regard to his teaching:

> "Osler was an excellent clinical observer, and he attributed most of his success in this to his thorough grounding in the results of disease which he gained as pathologist at Montreal. He did a great deal of original work himself, and he had the happy faculty of inspiring others with his own enthusiasm for original investigation, and his charming personality and manner attached to him in the course of his life hundreds of young men who thought it a great honor and gain to them to be allowed to work

for or with him. He always gave proper credit for work done by others, whenever and wherever it was due, and never forgot his assistants.''

Dr. Osler's professional ability as a teacher, his character, personality, and enthusiasm gained for him an international reputation. In 1904, when the office of Regius Professor of Medicine at Oxford became vacant, he was elected to the chair as a physician representative of medicine in its widest sense. His influence in Oxford may be estimated by the following statement by Dr. Charles Singer, quoted in the *British Medical Journal:*

''Perhaps only those who have known the medical school at Oxford both before and after Osler's arrival can estimate fully the change wrought by his personality not only in the mechanism, but in the whole spirit. Among Osler's predecessors in the chair at Oxford have been men of the very highest scientific distinction, but few or none had that kind of knowledge which comes of a long life of clinical teaching and of a wide experience of a variety of medical schools. This was Osler's special asset, and it was associated in him with actual scientific attainments and humanistic sympathies that have probably not been found in combination to a like degree in any one medical teacher since the days of Boerhaave.

''As soon as Osler came to Oxford he recognized the need of bringing the academic teaching of medicine there more fully into touch with the realities of practice. He not only threw all his weight into the adequate development of the departments of pathology and physiology, but he immediately discerned the need and the possibility of an extension there of clinical teaching. He saw that Oxford, a town of between 50,000 and 60,000 inhabitants, could not be a very great clinical school, but he knew from practical experience the special value that an academic atmosphere may give to clinical instruction and the value also that comes from an intensive study of material—a method either difficult or impossible in many busier centres. He thus succeeded in linking up scientific investigation and clinical experience. Nor will this method disappear with his direct influence, for he has inspired and left behind him a number of younger and distinguished exponents who will carry on his tradition.''

At Oxford, Dr. Osler spent some of the happiest years of his life, engaged in activities which he loved amid surroundings in which he took great delight. His last years were greatly saddened by the loss of his only son, Lieutenant Revere Osler, an artillery officer and a youth of great promise, who died as a result of wounds received in action about Ypres in 1917. He bore his sorrow bravely, alleviating his own grief as far as he could by lightening the sorrows of others. After an illness of several months during the autumn of 1919, Dr. Osler died at his home in Norham Gardens on the afternoon of December 29. He is survived by his widow, Lady Osler, whom he married in 1892, the daughter of John Revere of Massachusetts and the great granddaughter of Paul Revere.

Of Dr. Osler's scientific work, Dr. F. H. Garrison has remarked that

''No great physician has been more firmly grounded in the fundamental disciplines of his calling. Of the arduous years of post-mortem work at Montreal the Pathological Reports of the Montreal General Hospital (1876-80) are a permanent record, as also the eight editions of the great text-book on Practice of Medicine (1892), which has been translated into French, German, Spanish, and Chinese. The disciple of Morgagni and Virchow is equally apparent in the hundreds of clinical papers, the larger monographs in Osler's ''Modern Medicine'' (1907-10), the Gullstonian lectures on malignant endocarditis (1885), and the separate treatises on the cerebral palsies of children (1889), chorea (1894), abdominal tumors (1895), angina pectoris (1897), and cancer of the stomach (1900). From the start he did much original investigation of high quality. At the age of twenty-five (1874), he described the blood platelets associated with the name of Bizzozero, and defined their status as the third corpuscle of the blood and their relation to the formation of thrombi. Such early papers as those on the blood in pernicious anemia (1877), overstrain of the heart (1878), fusion of the semi-lunar valves (1880), reveal the born clinical and pathological observer. Osler was a profound student of all modes of aneurism, of tuberculosis, of typhoid fever, of disorders of the circulation. He was the first to emphasize the relation between mycotic aneurism and mycotic endocarditis, first described the ball-valve thrombus of the mitral orifice, the visceral complication of erythema multiforme (1895), chronic cyanosis with polycythemia, known as Vanquez' disease (1895), multiple telangiectasis (1901), the erythematous spots in malignant endocarditis (1908), and he discovered the parasite of verminous bronchitis in dogs (*filaria Osleri*, 1877). But to sense the magnitude of Osler's clinical work, it must be taken by and large in the 730 titles of the recently published Osler Bibliography (1919).''

Dr. Osler has received many honors both on this continent and in England in recognition of the value of his ideals and his service to humanity. At the time of the coronation of King George V he was made a baronet. He was honorary professor of medicine in Johns Hopkins University; he received the honorary degree of D. Sc. from the Universities of Oxford, Cambridge, Dublin, Liverpool, and Leeds, that of LL.D. from the University of McGill, Toronto, Aberdeen, Edinburgh, Yale, Harvard, and Johns Hopkins, and the title of D.C.L. was conferred upon him by the Universities of Durham and Trinity, Toronto. He was a foreign associate of the Academy of Medicine of Paris, and from the University of Christiania he received the honorary degree of M.D. On July 11, 1919, in honor of his seventieth birthday, there was presented to Dr. Osler, in the name of a large number of subscribers, a collection of essays in two volumes made up of contributions by approximately one hundred and fifty members of the profession on both sides of the Atlantic.

There have been few men in the history of medicine so universally and deservedly beloved as Sir William Osler. Dr. Thomas McCrae, Dr. Osler's successor at Johns Hopkins University, has characterized him as a "great physician, a wise counsellor, a true man, and, above all, a friend. Professionally he did much to advance knowledge, to improve medical education and to uphold the best traditions of a profession which he loved. A friend of young men, he never missed the opportunity to encourage and help them. How often he sent an approving word about an article or a good piece of work. As a teacher he did much to help medical education in this country and taught the lesson that the knowledge of disease is to be learned at the bedside rather than in the lecture room. A lover of books, he gave the first stimulus to many of an interest in literature, and especially in medical history. As a physician, he inspired confidence and gave courage to the sick with a constant example of kindness and consideration to those about him."

The British Medical Journal, in its issue of January 10, has published tributes to Sir William Osler from many of the University medical schools in the United Kingdom. Sir Clifford Allbutt, Regius Professor of Cambridge, has said of him:

"A quality which made Osler so fascinating a companion, his teaching so vivid and telling, and his parts in debate often so lively, was his wit and humor; the sharpness of the wit tempered by the sweetness of the humor. Indeed, much of his playfulness and whimsical mystifications were, in naturalist's phrase, a protective coloring to cover deep sensibilities.

"Osler's work for others was so incessant, and his hospitality so unbounded, that one always wondered when and where he amassed and made use of his learning; learning which, in particular, would discover itself, as it were, by accident, unless, indeed, his companions were expert enough to see it under the surface of his talk. Somehow or other, he put himself not only in sympathy with various subjects of study other than medicine, especially with literary pursuits, but he was able also to converse on something like equal terms with the masters of them."

Dr. G. S. Sherrington, F. R. S., Waynflete Professor of Physiology, Oxford, has remarked that "Among the characteristics which endeared Osler to his friends none was perhaps more striking than his combination of an intense affection for the past, and not least for the antique past, with an enthusiastic receptivity for the new, a sort of open-arms embracing of the future. To run his eye backward and forward along the historic continuity of Medicine seemed with him a daily and hourly habit, No man, I think, was ever less open to the misconception of the present as a moment apart, a thing that was stopping still to be looked into, and was intelligible by itself alone. Akin to his optimistic welcome of the new was his genial sympathy with the young; there was never a greater believer in the young generation than Osler, or a more generous encourager of it.

"Perhaps the most remarkable of his many gifts was that of rapidly making and then permanently retaining friendships. To see, speak to, and place at his ease as naturally his equal a young man, somewhat in awe of a famous leader of his profession, seemed an easy matter in his hands, and no doubt was the outcome of a wonderful sympathy that never failed, and at the same time was never obtrusive or other than natural in a very human man. This made him the same age as his companion, and indeed much as he loved old men, he delighted in meeting the young; with children he was a romping companion; to a mother in terrible distress for a son lost in the war the gentlest of comforters. There was no trace of the wall between the generations that the years so often build up, and probably few ever realized how strange this really was. His encouraging and stimulating attitude to young men made Oxford a Mecca to which there was a constant flow of pilgrims, especially from Canada and the United States, all certain of a welcome. Annoyance, irritability, or personal feeling of any kind was impossible to imagine in connection with his sunny temperament; that this was part of his philosophy of life is obvious in his charming address 'Aequanimitas,' and his attitude to his professional brethren finds expression in another address in the same volume on 'Unity, Peace and Concord.' Though a shrewd judge of character, neither his opinion nor the reason for it, if unfavorable, was given unless there was some urgent reason, and then the man's surroundings were blamed or a semi-humorous phrase settled the question without further affecting reputation; what he did not say in such circumstances was often very significant of his charity to poor human nature. There was a close resemblance between his personality and the written message conveyed in his charming addresses; the serious *motif* was always clear, but it was worked in with such a light hand that there was none of the solemnity or tedium almost inseparable from even a lay sermon. All his life he had been a lover of old authors and old books, Sir Thomas Browne being undoubtedly his favorite and his prototype in life's philosophy; thus it was that he did much to attract others to medical history and bibliography by weekly meetings during term at his house, at which the advances in medicine were sketched and early editions of the corresponding epoch-making works passed round. His literary style was epigrammatic, with apt illustrations, attractive from its classical flavor, and with the distinction conferred by his easily discernible personal touch. This was a feature of his popular textbook, so remarkable for its up-to-date picture of our science; a new edition was busily occupying his thoughts when his fatal illness began. His output was enormous, and it was a puzzle how, with innumerable engagements outside and an open house very rarely without its complement of visitors, he found time to read and work. To see him examine a case was a lesson in thorough clinical observation, and not least because the patient's interest was not forgotten in that of the case.

"To those who knew Osler well the simple lines written by Sorley about a V.C. who fell in the war, will not appear unsuitable:

We know the glory that is his,
The glory that can never die."

In the conduct of his life, Dr. Osler had three ideals, which he cherished and lived to the very end:

"To do the day's work well and not bother about tomorrow; to act on the Golden Rule towards his professional brethren and patients; and to cultivate a measure of equanimity to enable him to bear success with humility, affection of friends without pride, and to be ready when the day of sorrow and grief came to meet it with courage befitting a man."

SOCIETY NOTICES.

Harvard Medical Society.—A meeting will be held in the Peter Bent Brigham Hospital amphitheatre (Van Dyke Street entrance), Tuesday evening, March 2, at 8.15 o'clock.

PROGRAM

1. Dr. W. R. Sisson: The Effects of Feeding the Thymus Gland.
2. Dr. W. T. Bovie: Electrons and the Structure of Protoplasm.

Medical students and physicians are cordially invited to attend.

Elliott C. Cutler, *Secretary*.

New England Pediatric Society.—The sixty-second meeting of the New England Pediatric Society will be held at the Boston Medical Library on Friday, March 12, 1920, at 8.15 p.m.

The following papers will be read:

1. Diabetes in Childhood. Elliott P. Joslin, M.D. Discussion opened by F. G. Brigham, M.D., and Horace Gray, M.D.
2. Medical Supervision of the Boarded-out Child. Maynard Ladd, M.D.
3. Are the Amounts of the Individual Mineral Elements Usually Fed in Modified Milk Formulas Sufficient?, Alfred W. Bosworth and Henry I. Bowditch, M.D.
   Discussion opened by W. R. Sisson, M.D.

Fritz B. Talbot, M.D., *President*.
Lewis Webb Hill, M.D., *Secretary*.

BY BOAT TO THE NEW ORLEANS SESSION OF THE AMERICAN MEDICAL ASSOCIATION.

The schedule of the Southern Pacific Steamboat Line announces a boat to leave New York on Saturday, April 24, and to arrive in New Orleans at 9 a.m. Wednesday, April 28. The boat will lie at the Canal Street Pier, New Orleans, until Saturday, May 1. Passengers may make arrangements so that they may occupy state rooms for the three days on which the sections meet. In this way, they will be assured of comfortable lodgings while at New Orleans.

The boats of this line are large, well-appointed steamers that ply regularly between New York and New Orleans as a part of the Southern Pacific system.

DEATHS OF FELLOWS IN THE MASSACHUSETTS MEDICAL SOCIETY.

Wallace Miles Knowlton, M.D., a graduate of the University of Vermont, Medical Department, in 1880 and a practitioner in Newton and Boston, died in Boston February 6, 1920.

Elmer Ernest Southard, M.D., died of pneumonia in New York City, February 8, 1920, aged 43 years.

Ernest Henry Noyes, M.D., died at Newburyport, February 7, 1920, aged 66 years.

Harry John Tate, M.D., died at Pittsfield, February 11, 1920, aged 30 years.

Frederick James Russell, M.D., of Letchworth, Village, Thiells, New York, died in New York City December 21, 1919, aged 46 years.

The Boston Medical and Surgical Journal

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THE MEANING OF THE NORMAL.

By A. Le Roy Johnson, D.M.D., Boston,

Professor of Orthodontia, Tufts Dental School.

In medical and dental literature of the present day there is evidently a confusion of ideas as to the meaning of the word normal. In fact the variety of ways in which the word has been employed has resulted in so obscuring its real sense that the idea now conveyed by it, especially in the biological sciences, is not at all clear. One writer uses it as meaning an ideal, a goal to be sought after but never to be found; another interprets it as being synonymous with typical or average; while yet another refers to normal as signifying the natural. Such free and indefinite use of a word is of course wholly unscientific and cannot fail to take away much of its significance. Moreover, the custom of giving the word normal such an indefinite, free, unscientific interpretation reflects a very superficial attitude toward medical and dental problems in general. You will remember that words symbolize ideas. A clear mind will express itself clearly. The form may not be pleasing but the idea will be distinct.

The nature of the structures with which the dentist is concerned, *i.e.*, the teeth and their supporting and surrounding tissues, forces him to a careful analysis of the meaning of the normal. It is even more necessary that he should have a clear conception of the significance of the word than it is in some of the other branches of medicine. This suggests a distinction, a knowledge of which is fundamental in dental science.

Although we know that literally an organism is constituted of parts mutually dependent and essential, it is a matter of common knowledge that in the human organism some parts are more essential to the life of the organism than are others. The small intestine is more essential than the appendix; the muscles of the back are more necessary to survival than are the muscles of the fingers or feet; a man can live longer without teeth than he can without a stomach.

However, to say that one organ or part is more essential to the life of an organism than is another organ or part does not necessarily mean that they are more important in a consideration of the health and development of the organism as a whole. In fact I think it is quite the reverse. The covering of hair, the vermiform appendage, the caecum, the large intestine, and the teeth, while not so necessary to existence as the heart and small intestine, are more potent sources of disease and disorganizing deformities. Consider the frequency of cancer of the stomach; is it not safe to assume that it is associated with the limited usefulness of this organ? Men can live without teeth, yet it cannot be said that they are useless and harmful. However, the prevalence of dental disease and deformities of the dental arch argues well that the masticatory apparatus is at the present age out of harmony, to a certain extent at least, with the fundamental needs of the race. And it is because of this that the question of its care is a complex one. We should think of the teeth and the dental arch in the evolutionary sense, realizing that we are concerned with a part of the human organism unstable because relatively unessential, important in the consideration of the health and development of the whole individual because of the instability of its organization. In other words, from the fact that the forces of evolution have tended to limit its usefulness in sustaining life, a knowledge of the nature of the masticatory apparatus which is best adapted to its present function in the economy of the whole is more difficult to obtain and is as indispensable as it is difficult.

Thus in the consideration of organs and parts which constitute the more vital units in the organization of the individual the concept of the normal plays a different rôle than in the consideration of those parts which are more remote in their influence and indirect in their effect upon life processes. While a clear conception of the meaning and significance of the normal is necessary in either case, in the consideration of the latter group, the less essential parts, it is a practical necessity. The condition of one of the more essential parts of an organism directly shows itself in the functional activities of every-day life, but the relation of the appendages, accessories, disharmonies, if you will, is often so obscure in the life phenomena of the whole that the condition of their development is not so obvious. Hence the study of such structures is more complex and necessitates a more careful, comprehensive, and analytical consideration of conditions which determine its influence upon the organism as a whole; in a word, its normality.

In most of the textbooks on orthodontia, it has been customary to define "normal occlusion" as "the normal relation of the occlusal inclined planes of the teeth when the jaws are closed." I cannot believe that this definition is satisfactory to anyone. To say of normal occlusion that "it is the normal relation of the occlusal inclined planes of the teeth" does not help us in the least to know what normal occlusion is. We know occlusion to be the transient approximation of tooth surfaces; but what of normal occlusion? One might as well say in describing a brick fireplace that it is a fireplace made of bricks as to say that "normal occlusion is the normal relation of the occlusal inclined planes of the teeth when the jaws are closed" and not at the same time tell what normal is. Knowing what occlusion is, we want to know what particular form of occlusion is designated by the word normal. We know what the dental arch is, but what is a normal dental arch?

The word normal is defined clearly enough in the dictionaries. Webster says that normal is "according to or not deviating from an established norm"; and then defines norm as "a rule or authoritative standard." As used in the organic sciences, normal is "according to, constituting or not deviating from a standard or rule which is observed or claimed to prevail in nature." Normal is not synonymous with natural, the two words do not convey the same idea, they cannot be used interchangeably.

When we enter the realm of biology it seems upon superficial reading that the word normal is used in contradictory ways. Nevertheless, I believe that in many instances the confusion is due to the difference in the nature of the conditions referred to rather than to a different interpretation of the word. The standard to which normal refers depends upon whether the problem is one of species or whether it is a question relative to the individual organism. Please note how Thomas Dwight uses the word normal in a chapter on Variations and Anomalies, as illustrating the former. He says, "There is *normally* in the human shoulder blade a little projection from the lower part of the front border." In another place he says, "There are also anomalies of tissue, in which a certain structure that is usually of one material is made of another, as when what is *normally* a cord is made of a bone or cartilage." I quote again, "Now I found this form of muscle in both arms of the chimpanzee, and Macalister observed it *once* in the tiger, though it is *normal* to neither." Here as generally in the field of morphology, normal refers to the most usual, *i.e.,* a condition characteristic of a race, group, or species. There are exceptions, but the rule is that the condition prevails. Normal refers to the fact that the conditions, though admitting exceptions, can be taken as a standard. Take, for example, the number of ribs of the individual human organism. The large majority of men possess 12 pairs. This, then, is the *normal* number for man. Yet individuals are known to have eleven or thirteen pairs of ribs. One with thirteen pairs has an *abnormal* number as regards the standard for the species, although individually he may be a perfectly *normal* organism. Hence in morphology normal signifies a standard determined by the constancy, the prevalence, the frequency of the occurrence of a condition in different organisms of a species. For this reason and for the sake of clearness it may be permissible to designate as the species normal this interpretation of the word, since we mean that the individual conforms to the standard for the species.

But when the object of consideration is the relation of an organ or part to the individual organism the standard to which normal refers is of a different kind. For instance, we know that the presence of a stomach is normal for the human being, meaning that the large majority of human beings are in possession of an organ called the stomach which presents many morphological characteristics common to the same organ in the other human beings. But what do we mean by a normal stomach in the sense of its relation to other parts of the organism? A normal individual has two feet which possess characteristics common to the human foot, but what is a normal foot? A normal characteristic of the human being is weight, but what do we mean by the normal weight of a particular individual? So as in the species sense the word normal refers to a standard of numerical frequency, in the individual sense it refers to a standard of a functional nature, a physiological correlation.

A normal stomach, then, in one sense of the word, is one which in function is best adapted to the needs of the individual organism of which it is a part. This is determined by its functional efficiency. The standard is a physiological one. Although a consideration of the size, form and position of the stomach is sometimes necessary in ascertaining the cause of functional difficulties, one does not attempt to measure it or to visualize its form to know whether or not it is normal. The question of the normal is in this instance a physiological one, a standard of functional efficiency in its relation to the life activities of the whole individual organism. In the same sense a foot is normal or abnormal as its functional activities help to maintain or to interfere with the organization of the whole individual. A normal foot is one that functions properly; an abnormal foot is one that does not. (Of course here the word function is used in its broadest sense). Because a foot does not conform in size and shape to a conception one may have of an ideal human foot does not fix it as abnormal for the individual. The concept of the typical form of the foot is utilized as a basis for the consideration of morphological characters, but the condition which determines whether a foot is normal or not is the relation it bears in function to the other parts of the organism. The question is primarily one of physiological correlation. If you would know whether the weight of a child is normal or abnormal, not as compared with other children, but for a particular child, it is a problem of all vital processes and functional activities, local and general. Merely weighing the child is of little value and means nothing unless the weight is correlated with height, vital capacity, physiological age, general form of structure, and metabolic processes. The significance of weight is derived from a study of the vital processes of the whole individual. Thus the normal is in this instance as in those above, one of a physiological correlation. In the *individual* sense the standard referred to by the normal is in the ultimate determined by the life activities of the individual organism as a whole. A part is normal or abnormal to the individual as it affects the organization of that individual.

The same is true of the dental arch and occlusion. When either is considered from the standpoint of morphology alone it is normal or abnormal as it presents the characteristics common to the race, group, or species to which it belongs. From this position the dental arch of man is normal in its development in that it conforms to a standard of development determined by the observation and comparison of many specimens. Thus in one sense of the word the occlusal relations of the teeth of an individual are normal or abnormal as they are like the condition of occlusion that is characteristic of the majority. Normal is not perfection; it is a standard in actual existence.

In the consideration of the dental arch and occlusion of the teeth in their relation to the individual organism the normal, although refering to phenomena of a different nature, designates a standard as truly as it does in the group or species sense. The standard referred to here not only involves a morphological correlation, but in the ultimate implies a standard of a functional nature. It refers to a condition which is most effective in establishing and maintaining in its most stable form the organization of the living organism.

The observation of the occlusal relations of the teeth of an individual as exemplified in the plaster models, enables one to ascertain in what degree the condition of occlusion approximates the typical. The occlusal relations of the teeth of an individual will never be the same as the typical in all particulars since type is not a fixed point, but an abstraction determined by the extent and direction of individual variations. One may refer to the occlusion of an individual as being normal in the sense that the condition of occlusion comes within the range of variation characteristic of the majority of the members of the group to which the individual belongs. It is normal in the sense that it possesses many of the characteristics expressed as typical.

But in orthodontia we are more directly concerned with occlusion in its relation to the individual organism of which it is a part than with its relation to the occlusal conditions of other individuals. Our problem is to determine in what degree the occlusal relations of the teeth and the form of the dental arch of an individual can vary from that which is characteristic of the group or species and yet be consistent with the needs of the individual organism. Hence in the ultimate the standard to which normal refers to the consideration of occlusion in its relation to the whole individual is a criterion of a functional nature rather than a fixed concept of structural forms and relations. Such an interpretation of the normal involves a study of life processes in general. The collective or species normal is our basis of study; our guide; our ideal in the consideration of the individual. Yet in view of the facts of variation and heredity the question of the individual normal involves a problem of physiological correlation which designates the individual normal as a standard of a functional nature, determined by the action, reaction, and interaction of the parts and processes in the life activities of the whole individual.

The place of the teeth in the organization of the human being living today makes it imperative that the dentist, and especially the orthodontist, should study the meaning of normal. The conception of the normal dental arch is the foundation of modern dentistry. To assist in establishing and maintaining the normal functional activity of the masticatory apparatus of the living human being is its purpose. Thus the concept of the normal, what it means, what it signifies, is at the very foundation of dentistry, and its careful analysis is a practical necessity to the progress of the science.

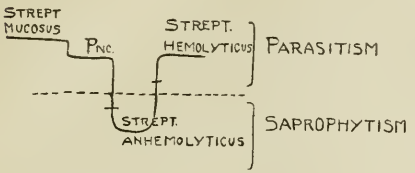
THE CLINICAL BACTERIOLOGY OF THE PNEUMO-STREPTOCOCCUS GROUP.

By D. M. Lewis, M.D., New Haven, Conn.

Based on standardized laboratory technic of the immediate few years previous to the war, the laboratory statistics of the war period have outlined the immediate necessity of combating streptococcal infections and those especially caused by the hemolytic type. Such work is naturally being directed along the lines which previously established the so-called fixed types of pneumococci, biological differentiation showing numerous types of the hemolytic streptococcus. Like all other problems of infection, the possible perspective of this group of bacteria from another viewpoint than that of the laboratory only, has been accentuated to such an extent that to one who has been following field work extensively it is most appealing. Appealing from two viewpoints—the one, that medical bacteriology of this group of bacteria especially is not as complex as the laboratory tends to make it, and secondly, the closer collaboration of bacteriology for the solution of the problems of epidemiology.

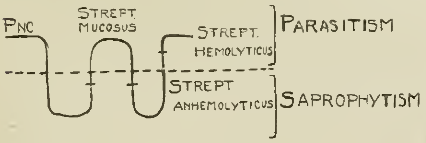
If we review the main facts as acknowledged at the present time the various phases of the group may well be illustrated by the following illustration.[1] From morphology and capsule

A



characteristics, colony appearance on blood agar and bile solubility, the four varieties are generally held to be easily distinguishable—the streptococcus mucosus nearest the pneumococcus by virtue of capsule and bile solubility; the anhemolytic streptococcus and the hemolytic differentiated only by the presence or absence of hemolysis on sugar-free blood agar. Under differentiation of pneumococci it is held that types 1 and 2 are fixed, infection occurring from without, while 3 and 4 are normal inhabitants, and autogenic infection occurs from breaking down the barriers. Similarly under the streptococci the anhemolytic is the normal inhabitant and until recently never found in the blood stream apart from the bacteremia of cardiac infections, while the hemolytic type was rarely found in the normal individual. The latter holding true for the streptococcus mucosus, I believe the previous illustration would be better expressed as follows:

B



Examining civil statistics as lately shown,[2] the following points I would emphasize: the low per cent. of lobar pneumonias normally from type 4 in adults, 20-25%; the varying mortality of different years, 5% in 1914 and 25% in 1916; the high per cent. of the type in children, as high as 74%; the similar findings for post-operative pneumonias and common colds. In the terms of the laboratory, types 1 and 2 cause the predominant lobar pneumonias of adults, whereas type 4 predominates in the pneumonias of infants and children, and the mortality of types 1 and 2 is lower in the latter ages than in adults. Examining the war camp statistics there are notable examples of the almost pure type 4 broncho-pneumonias and a mortality exceeding that previously known in infants and children, whereas in other camps the combination of demonstrated per cent. of normal carriers, as well as the time of the epidemic, showed that this type was not the infecting organisms causing death. Thus at Funston, in "flu" cases without pneumonia, there was an incidence of type 4 of 57 per cent. with streptococci of 10 per cent., of recovered pneumonias 60 and 10 respectively, and that of fatal pneumonias of 60 and 8 respectively; at Custer the reverse approximate percentages of these organisms held. At Sherman a picture similar to Funston and corroborative per cent. of normal carriers of type 4 as contrasted to a similar incidence for the streptococcus hemolyticus. It is possible to correlate the high incidence of the type 4 in civil life in children and the war as contrasted with the statistics of pneumonias of adults in civil life: those of children were taken during 1915-1916 when we had over the whole country a "grippe" epidemic, while the adults were taken during 1913-1914. It is possible then to correlate also the abnormal incidence in terms of abnormal incidence of carriers in both instances, thereby questioning the autogenic theory of infection by this type and placing it in the same category as the first two types. There remains then the fact of discrepancy of mortality. As one possible of lesser virulence during interim years the low one recorded in adults in civil life holds true to form. Wherein lies the difference between a type 4 that is found in the blood stream during the course of pneumonia, the high frequency invader of cases without pneumonia and of carriers as opposed to the same type at another camp where it was never found in the blood stream ante-mortem. There is one possibility—are we generally dealing with the streptococcus mucosus, whose colony characteristic simulates the pneumococcus?

If now we examine the statistics of the streptococci as related to previous civil life, there is prominent the importance of the hemolytic streptococcus as causative of septic sore throat while during the war a yet further prominence that, as the causative factor in the mortality of broncho-pneumonia, of measles, German measles, scarlet fever, and influenza, the varying pathological appearances of those pneumonias were notable. Whereas the lobar pneumonia of the fixed types was similar, the broncho-pneumonias of hemolytic streptococci were different. While there was the proportionate high incidence of healthy carriers at the time of high incidence in those camps with high frequency of infections due to that organism and the return of both to normal after the epidemic was over, there are some discrepancies besides that of the differing pathology of the pneumonia to be explained. At Custer at the same time that 75 per cent. of the healthy carriers showed the organism, sputum and throat cultures of influenza patients both with and without pneumonia showed double the per cent. of non-hemolytic streptococci while the lungs at post-mortem showed the reverse and ante-mortem blood cultures the hemolytic only. Further, that where but 11 of 510 such cultures were positive, that of the last 80 cultures seven were positive. Yet again where non-hemolytic were only present in sputum and cultures, the hemolytic type was later found in the pleural exudate. In another camp, in 77 cases of fatal "flu" pneumonia and 163 cases with recovery, the hemolytic streptococcus was not found in the sputum, yet post-mortem in 41 per cent. of those fatal cases tissue cultures and empyema fluids showed that organism. Suggestive is the fact that where one watches the appearances of the hemolysis on plates from the same case that, as the case progresses toward convalescence, there is increasingly shown a division of such hemolytic colonies originally with purely wide zone hemolysis into three types, called by some a, b, and c, in accord with the decreasing size of the zone. And progressively there also appears increasing numbers of the non-hemolytic type. In some such cases with the sudden appearance of some complication like an otitis media, throat cultures again give pure cultures, or approximately such, of wide zone hemolytic type. There is also to be remarked the known previous fact that occasionally an organism found causing hemolysis in homologous blood does not cause hemolysis in heterologous blood.

In support of these apparent discrepancies as to the fixedness of these various types of streptococci the following quoted sentence represents the accepted laboratory status of the situation previous to the war: "We believe that mutations occur in nature—that they occur uncommonly and that their occurrence is not of sufficient frequency to interfere with current bacteriological methods or with the practical application of those methods to clinical medicine." The widest extreme that is classical is the isolation of a pneumococcus from an endocarditis which settled down to the later laboratory life of a hemolytic streptococcus. There is acknowledged then the possibility that the duration of activity of its life in the human body determines the "fixedness" of type of these organisms. Two other possible factors have had no investigation: growing fresh cultures from the human body on media simulating as closely as possible the chemical abnormalities that are taking place in the body at the time that such organisms are obtained; and secondly, the study of that organism as obtained from the carrier contact who infected the case as to whether he may not be the cause for variations in what would otherwise be fixed. In both there is open for consideration a factor which has had no practical application, namely, the influence of symbiosis of other organisms present in the case and in the carrier. It is conceivable that the hemolytic streptococcus studied from that standpoint would reveal the differences manifest in measles, scarlet fever, influenza, and septic sore throat. I am convinced that such studies would reveal the epidemiological dependency of such widely divergent clinical manifestations as the occurrence published of a pure septic sore throat epidemic following streptococcal influenza respiratory manifestations at the Chelsea Hospital as related by Keegan[3]. The apparent simplicity of interdependence of respiratory disease frequencies would be explained by and correlated with a similar bacteriological simplicity. The further possibility of explaining the etiology of some unknown diseases is apparent; may not a hemolytic streptococcus resident in a scarlet fever carrier be so modified as to be the cause at that time of the disease at the same time that a full brother of that organism through a similar selective residence is being fixed for transfer of measles or septic sore throat? Epidemiological investigations have shown that such may be a logical explanation.

SUMMARY.

Bacteriological study of the pneumostreptococcus group in terms of fixation of type through growth in abnormal chemical and symbiotic relations of both carrier and case present opportunities for the explanation of many dominant problems of the present; rationalizing the discrepancies of laboratory and epidemiology and simplifying both branches of science comprise the larger of such problems.

REFERENCES.

[1] Aschner: Jour. Infectious Diseases, 1917, Vol. xxi.
[2] Bernton: Recent Classification and Treatment of Pneumonia, Fiske Fund Prize Essay, No. lviii.
[3] Keegan: Hospital Epidemic of Septic Sore Throat, etc., Jour. A. M. A., May 17, 1919.

NOTES ON THE USE OF THE PORTABLE RESPIRATION APPARATUS.

By Francis G. Benedict, Boston.

[From the Nutrition Laboratory of the Carnegie Institution of Washington, Boston.]

The clinical study of the respiratory exchange has been necessarily limited, owing to the extraordinarily complicated technique and rather expensive laboratory equipment heretofore needed. As a result of extended investigations on the metabolism of normal individuals, a form of apparatus has been developed in the Nutrition Laboratory which has been described in this Journal as the "portable respiration apparatus."[1] This apparatus, which is designed to do away with weighings and exact gas analysis, has been rather rapidly taken up by a number of clinicians in studying pathological cases, particularly hyperthyroidism.

The original apparatus was constructed by Mr. W. E. Collins, the mechanician of the Nutrition Laboratory, and several models were used in connection with the investigation on the influence of restricted diet upon the metabolism of 25 young men.[2] At the conclusion of this research, four of these were sold at the cost of manufacture. The apparatus has never been and will not be patented; any instrument maker may therefore copy it. Since a large number of requests have come to this laboratory for the apparatus, we have turned them over to a local manufacturer, without assuming any responsibility whatever for his workmanship or accuracy. At present, he is the only one constructing the apparatus and his productions, so far as we know, have been satisfactory.

One of the main objects in the development of the portable respiration apparatus was to do away with the work of the lungs in actuating valves and forcing expired air through air purifiers. Consequently an electric blower was inserted in the circuit and this blower, after a great deal of experimental work, has been adopted as a permanent part of the equipment. It consists of a small hair drier, usually obtainable on the market. These hair driers, normally rated as taking 0.3 ampere,* actually require 0.65 ampere for starting and after running a moment, 0.5 ampere. As ordinarily supplied, they are designed for use with a 110-volt current and obviously will not stand a higher voltage.

It should be stated that seven of these apparatus were used daily for nearly four months, four of them being simultaneously used by one assistant, and three by another assistant, and but one blower was destroyed. The blower is so constructed that it may be started by an electric switch and stopped by the same method, *but it must be oiled and given reasonable care.* Recently several users of the apparatus have reported that the electric equipment of the apparatus has burned out. It seems wise, therefore, to analyze these difficulties and, if possible, to suggest a remedy. In one case, a 220-volt current was turned on to the 110-volt motor! ! Usually the difficulty has been due to the fact that the motor has stopped for want of oiling or for some other cause and, after a short time, the heating effect in the armature has built up to such an extent that the insulation breaks down, combustion takes place, and the motor burns out. This is particularly unfortunate as one of the prerequisites of the apparatus is that the air inside the ventilating circuit should be somewhat rich in oxygen; under these conditions a lively combustion is liable to follow.

It has been pointed out by one user of the apparatus that it is not impossible that when such combustion takes place, the smoke and fumes might be driven through the ventilating system to the lungs of the subject. With this point we are inclined to disagree, for when the motor takes fire and burns out, causing fumes, there is no further means of driving the ventilating air current around to the lungs of the subject. In the remote contingency that ventilation may continue for a few seconds, it should be noted that the soda-lime bottle would act as a fairly efficient "scrubber" for removing the smoke. "Rebreathing" of air with the smoke admixture is not, however, impossible.

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* Erroneously stamped by the manufacturer as 3 amperes.

It should be emphasized that the apparatus was not described until it had undergone very severe tests as outlined above. If, when the operator hears the blower stop, he turns the switch and 3-way valve immediately, we do not see how there can be any danger. If the current is allowed to flow through the instrument when the blower has stopped, a burn-out is inevitable.

Attention should be called to the fact that by a very simple adaptation, a positive blower, directly attached to the armature shaft of a 1/8 h.p. motor and mounted on the base of the apparatus, can be easily adjusted to provide sufficient ventilation and do away with the hair drier. By connecting the intake side of the blower with the spirometer, and connecting the discharge directly with the soda-lime bottle, a rapid circulation can readily be obtained. One-eighth inch piping suffices for this purpose. We have connected such an arrangement to one of our laboratory apparatus and have obtained satisfactory results.* Such a change in the apparatus adds appreciably to the cost and weight, and we believe it to be unnecessary, hence we have not used it in our experimental work.

Bells made of thin sheet aluminum (0.005 in.) were originally employed. We have still no reason to think that a better material for the purpose has been found. One objection to the aluminum is that when immersed in water and allowed to remain for any length of time, it is liable to become somewhat pitted. To prevent this, we have in our own apparatus occasionally employed a thin oil in place of water. Obviously a combustion inside the bell, with an oxygen-rich atmosphere and with an oil bath, would have serious results. Consequently, we strongly recommend that water alone should be used. By removing the bell at the end of the day and drying it gently with filter paper or cheesecloth, the pitting may be long delayed. The blower should also be removed, any adhering water dried off, and the bearings oiled. Before replacing the bell at the beginning of the next day's experimenting, the motor should be run a moment or two.

Apprehension has been expressed by some users of the apparatus that the more recent procedure of employing only a soda-lime bottle instead of a train consisting of a calcium chloride bottle, followed by a soda-lime bottle, and a second calcium chloride bottle, may give rise to errors, inasmuch as the moisture in the soda-lime bottle may be sufficient to affect the method of calculation. By reference to the original description of the apparatus,[3] it will be seen that theoretically this error has been recognized. When the calcium chloride bottles are discarded, the air is then dried over soda lime rather than over calcium chloride. Although the large amount of moisture expired from the lungs of the subject is directly discharged into the bell before it reaches any form of water absorbent, the total volume of expired air, when diluted by the continuous supply of air in the apparatus, gives a very low humidity. This has been proved by repeated tests with a psychrometer in the connections between the mouthpiece and the spirometer bell. When soda lime is substituted for the calcium chloride, we have to do simply with the difference in drying power of the two reagents. Undoubtedly calcium chloride will absorb a greater proportion of water than soda lime. In this laboratory we have had considerable experience in collecting the water given off by soda lime in passing dry air over it, as this is one of the procedures with respiration apparatus regularly in use here. An approximate computation shows that about 10 grams of water are absorbed from about 12,000 liters of air. Since one cubic meter of air saturated at 20° C. has about 17 grams of water vapor in it, it can be seen that the air leaving the soda lime is only about 5% saturated. A simple calculation will show that this has but little appreciable effect, *with the Emmes modified method,** in reading the spirometer of the portable apparatus.

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* A combination blower and motor is the Cenco Rotary Blower and Vacuum Pump combined, No. 1400, supplied by the Central Scientific Company, Chicago, Ill. It consists of a blower with a 1/8 h. p. direct connected motor, mounted on a cast iron base. This combination suffices to circulate about 35 liters of air per minute through the apparatus and hence may be cut down by resistance, if desired. The motor is preferably started through a small rheostat. At the low air pressures obtaining inside of the portable respiration apparatus, no leakage through the movable parts of the blower is to be expected.

In case a rotary blower is installed on the apparatus, a test of the whole apparatus for leakage should be made with the blower running. With no temperature change there should be no change in the height of the bell during 15 minutes. Each degree Centigrade rise or fall produces an increase or decrease of about 2 mm., *i. e.*, 1/273 of the air volume, which is about 10 liters with one soda lime bottle in the circuit.

Finally, attention should be called to the fact that this laboratory has at no place or time recommended the portable apparatus for the diagnosis of or as an index of treatment for any specific disease. In fact, like most new instruments, we fear it is liable to very considerable misuse. The basis of much of this misuse may readily be the proneness of medical men to fix in their minds the picture of an inflexible normal value for adults and, in comparing the measured oxygen with the preconceived value, to misinterpret the results obtained. Attention should be called to the fact that in the recent report of the studies with 17 unpracticed subjects by Hendry, Carpenter, and Emmes,[4] two showed a metabolism 14 or more per cent. below "normal" and one a metabolism 11.5 per cent. above "normal," and in the study of 12 normal young men in the low-diet investigation at Springfield, one showed a metabolism 14.3 per cent. above the so-called normal.

From a biometric analysis of metabolism values for 136 men and 103 women, Harris and Benedict[5] have derived a prediction formula to indicate the most probable metabolism of individuals based upon the fact that *sex, age, weight, and height all have an independent influence upon basal metabolism.* This formula is:

For men:

$$h = 66.473 + 13.752\,w + 5.003\,s - 6.755\,a$$

For women:

$$h = 655.096 + 9.563\,w + 1.850\,s - 4.676\,a$$

in which h = daily heat production, w = body-weight in kilograms, s = stature in centimeters, and a = age in years. Thus, for computing the most probable metabolism of a man weighing 70.5 kilograms, with a height of 172 centimeters, and 29 years of age, the following computation would be made:

$$h = 66.473 + (13.752 \times 70.5) + (5.003 \times 172) - (6.755 \times 29) = 1701 \text{ cals.}$$

To simplify the use of these equations, a series of tables has been prepared, by which the most probable metabolism of a man or woman may be obtained by simply adding together the entry for body-weight in one table and that for stature and age in a second table.[6] As is inevitably the case with all biological data, the original data upon which these equations were based had wide variations and hence it is erroneous to maintain that any given individual will show a metabolism exactly in accord with the computations from this formula. Clinicians should therefore be on their guard against ascribing too great significance to either a plus or minus variation from the so-called normal in any given individual case. For physiological purposes, the effect of any superimposed factor, such as diet or work, may adequately be studied only by the use of several subjects. Certain diseases, particularly hyperthyroidism, are characterized by profound increases in basal metabolism. That any particular patient showing a metabolism more than 10 per cent. above "normal" or 10 per cent. below "normal" (the at present commonly accepted limits of clinicians) should be considered on this evidence alone as a pathological case, we strongly disagree. Since in this laboratory we usually deal with normal conditions only, under which conditions the influences upon the metabolism are rather slight, deductions can only be made from a relatively large number of experiments with several subjects. *There is no inflexible standard for normal metabolism for any given age, weight, height, and sex, from which all normal individuals never vary.*

REFERENCES.

[1] Benedict: Boston Medical and Surgical Journal, 1918, clxxviii, p. 667.

[2] Benedict, Miles, Roth, and Smith: Carnegie Inst. Wash. Pub. No. 280, 1919.

[3] Benedict: Boston Medical and Surgical Journal, 1918, clxxviii, p. 675, footnote.

[4] Hendry, Carpenter, and Emmes: Boston Medical and Surgical Journal, 1919, clxxxi, pp. 285, 334, and 368.

[5] Harris and Benedict: Biometric Standards for Energy Requirements in Human Nutrition, The Scientific Monthly, 1919, 8, p. 385. In the equation for women, on page 397, attention should be called to a typographical error in that the first figure should read 655.096 instead of 665.096. On the same page there is a second typographical error in the first application of the equation for men in that the first figure in the calculation for the heat production should be 66.473 instead of 66.973.

[6] See Harris and Benedict: A Biometric Study of Basal Metabolism in Man. Carnegie Inst. Wash. Pub. No. 279, 1919, especially Appendix, pp. 251-266. This publication can be purchased from the Carnegie Institution of Washington, Washington, D. C., at the cost of printing, namely, $4.00. All communications regarding the purchase of this monograph should be addressed to the Carnegie Institution of Washington and not to the Nutrition Laboratory.

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* This method is strongly to be recommended over the original, with its unnecessary complications. See original paper: Benedict, Boston Medical and Surgical Journal, Vol. clxxviii, 1918, p. 673.

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VACCINATION LEGISLATION.

The evidence of the efficiency of vaccination in preventing smallpox is so overwhelming that it is not easy to realize the obligation upon the medical profession to keep presenting this evidence in order to offset in the minds of our Legislators the pleadings of the anti-vaccinationists. This year it seems highly necessary to make sure that our Senators and Representatives shall be furnished with the facts.

In this State, where for so many years there has been so little of the disease, it is not easy to prove that our immunity has been due to compulsory vaccination. The terrible scourges of a century ago have been forgotten. It is even doubted by some if there really is any such disease. And, if there is such a disease, many doubt if there is any connection between its practical disappearance and the practice of vaccination.

In other communities, where the smallpox has until lately been prevalent and where after general vaccination it has disappeared, it is easier to prove the case. For instance, in the Public Health Reports No. 57 of the Public Health and Marine-Hospital Service of the United States there is an article by Dr. Victor G. Heiser, formerly Director of Health for the Philippine Islands and Dr. Robert Oleson upon the Smallpox and Vaccination which gives facts that ought to be more generally known. This seems to be a fitting time to present the following extracts from the Report, which was originally published in 1911.

Alfred Worcester, M.D.,
President of the Massachusetts Medical Society.

"At probably no time in the world's history has the efficiency of vaccination as a preventive for smallpox been so conclusively and effectively demonstrated as in the Philippine Islands since American occupation.

The evidence of its value is incontestible.

During Spanish times it was necessary each year during the dry season to erect in Manila a large temporary hospital to which the many hundreds of victims of smallpox could be taken. The great majority of them died.

During the past five years not one person has died in Manila from smallpox who had been successfully vaccinated during the five previous years; nor has anyone died of smallpox in Manila since June, 1909.

Since 1907, when the systematic vaccination was completed of the six Provinces near Manila, which have an approximate population of 1,000,000, and which from time immemorial had an annual average mortality from smallpox of at least 6,000 persons, not one person has died of smallpox who had been successfully vaccinated, and only a few scattering cases have occurred. During the past two years some deaths have been reported, but careful investigation shows that not one death took place in a vaccinated person.

In May, 1904, the United States Army transport, *Liscum* left Manila with 26 cabin passengers, 170 steerage passengers, 16 officers, and 80 members of crew, or a total of 292 souls on board. During the first week smallpox broke out aboard the vessel in an unvaccinated child in the steerage. An examination of the personnel on board showed that three members had never been vaccinated. Within a period of two weeks these unvaccinated persons were stricken with the disease and not one of the 289 remaining persons contracted it.

* * * * *

An accurate estimate of the prevalence of smallpox in the Philippine Islands under the Spanish régime is not available, but judging from the partial reports received from the provinces during the first few years of American occupation the death rate must have been appallingly heavy.

The policy of persistent systematic vaccination, inaugurated 12 years ago by the American sanitary authorities, has been attended with excellent results. In the larger cities and easily accessible localities the disease has become mild, relatively infrequent, and death is rare. Severe outbreaks of variola are occasionally reported in some of the remote communities. In these instances, however, it has invariably been found that vaccination has been incomplete. Either it has been impossible to plan a potent virus in the field for vaccination, or the people, through ignorance, superstition, or wilful neglect, have failed to avail themselves of the proven prophylactic advantages of the measure.

In order that the efficiency of protective inoculation may be illustrated, a few of the many successes which have attended the efforts of the bureau of health for the Philippines are here cited.

* * * * *

In Pampanga Province there were 278 deaths from smallpox in 1904 and 168 in 1905. After vaccination was begun with some degree of regularity the decrease in the ravages of the disease became manifest: 1906, 35 deaths; 1907, 14 deaths; later, to date, no deaths.

During the systematic vaccination of the Province of Albay, with a population of 234,000, bitter opposition was encountered in the towns of Tabaco and Malinao. Many people remained away from the towns until after the departure of the vaccinators. The following year 40 deaths from variola occurred in these two localities, the only cases in the entire Province. The authorities suppressed the disease by enforced vaccination of those who had previously escaped and since then there has been no smallpox in the Province.

In January, 1910, the district health officer of Ilocos Sur was summoned to the town of San Esteban to aid in combating an epidemic of smallpox The work of thorough vaccination began on January 26, after the great majority of cases had developed. The beneficial results were immediately apparent as shown by the following enumeration of cases:

January, 1910	126 cases	29 deaths
February, 1910	75 cases	22 deaths
March, 1910	10 cases	6 deaths
April, 1910	1 case	1 death

Subsequently there were no cases. Of the 58 persons who succumbed to smallpox, not one had a vaccination scar, nor did any of the 154 survivors have scars denoting recent successful vaccination. The instance is particularly noteworthy because attention was directed solely to vaccination. The epidemic occurred in the dry season, climatic and sanitary conditions remaining the same.

That portion of the Province of La Union lying north of the town of San Juan was systematically vaccinated in 1905, with the resulting disappearance of smallpox. In the unvaccinated southern part of the Province there were yearly outbreaks even while the northern portion remained free from the disease. Following systematic vaccination, variola was also eradicated from the southern portion, a phenomenon commented upon by the impressionable people with amazement.

* * * * *

Prior to 1905 between 3,000 and 4,000 deaths from smallpox were reported each year in the Province of Cebu. In 1905 and 1906 the systematic vaccination of the 650,000 inhabitants was undertaken. In 1907 there were only 94 deaths, and in 1908, 84 deaths from the disease.

As smallpox was apparently on the wane, vaccination was suspended for two years. In the meanwhile there was a decided increase in the number of unprotected people, due to births and immigration from neighboring islands. During 1909 there was a recrudescence of variola, in which 736 persons lost their lives. Investigation proved that over 90 per cent. of all the cases were among unvaccinated children, that no cases were reported among persons recently successfully vaccinated, and that the small number of adults attacked were nearly all unvaccinated. The Province has again been thoroughly vaccinated."

MEDICAL NOTES.

Gift of the Carnegie Corporation of New York.—The Carnegie Corporation of New York has announced its purpose to give $5,000,000 for the use of the National Academy of Sciences and the National Research Council. It is understood that a portion of the money will be used to erect in Washington a home of suitable architectural dignity for the two beneficiary organizations. The remainder will be placed in the hands of the Academy, which enjoys a federal charter, to be used as a permanent endowment for the National Research Council. This impressive gift is a fitting supplement to Mr. Carnegie's great contributions to science and industry.

The Council is a democratic organization based upon some forty of the great scientific and engineering societies of the country, which elect delegates to its constituent Divisions. It is not supported or controlled by the government, differing in this respect from other similar organizations established since the beginning of the war in England, Italy, Japan, Canada, and Australia. It intends, if possible, to achieve in a democracy and by democratic methods the great scientific results which the Germans achieved by autocratic methods in an autocracy while avoiding the obnoxious features of the autocratic regime.

The Council was organized in 1916 as a measure of national preparedness and its efforts during the war were confined chiefly to assisting the government in the solution of pressing war-time problems involving scientific investigation. Reorganized since the war on a peace-time footing, it is now attempting to stimulate and promote scientific research in agriculture, medicine, and industry, and in every field of pure science. The war afforded a convincing demonstration of the dependence of modern nations upon scientific achievement, and nothing is more certain than that the United States will ultimately fall behind in its competition with the other great peoples of the world unless there be persistent and energetic effort expended to foster scientific discovery.

A Case of Bullet Embolus.—In the London *Lancet* for Janury 3, 1920, Mr. H. J. B. Fry records the following remarkable case of bullet migration. Of all the strange and bizarre wounds which occurred in the great war it seems one of the most unusual.

A soldier while standing by his battery was wounded on April 2nd, 1918. He suddenly experienced a sharp stinging pain in his left foot. Examination of the foot showed no wound, but a small circular wound was found just below the left anterior superior spine of the ilium. Marked ecchymosis of the upper thigh and groin region soon appeared, and clinical signs consistent with arterio-venous aneurysm of the iliac vessels developed. The foot became cold and blue and no pulsation of the leg vessels could be made out. X-ray examination showed no sign of foreign body from the imbilicus to the knee. Gangrene developed and the leg was amputated below the knee. The patient succumbed one month after the original injury.

It was found at autopsy that the bullet had entered the left external iliac artery and penetrated into the lumen of the left internal iliac vein causing an arterio-venous aneurysm of these vessels. From here the bullet was carried by the blood stream up the common iliac vein and the interior vena cava. It passed through the chambers of the right side of the heart. through the pulmonary valve, into the left branch of the pulmonary artery where it impacted as an embolus in one of the branches supplying the lower lobe of the left lung, and causing two infarcts in this lobe.

Mr. Fry goes on to say that such a tortuous course of the bullet's migration was in itself remarkable, but even more than this, examination showed no injury in any of the veins along which the bullet passed. The tricuspid and pulmonary valves were also uninjured. All through the illness there was no pain or discomfort referred to the heart or lung.

The Fulfilment of an Influenza Prediction.—In the November 8 issue of the London *Lancet* there appeared a prediction of Dr. John Brownlee, D.Sc., based on a careful study of past influenza epidemics, that a recurrence of the 1918 influenza epidemic would occur in January or February, 1920. Doctor Brownlee found that influenza epidemics recurred at intervals of 33 weeks, providing the thirty-third week did not fall between June and December, in which case the recurrence would be expected at the end of 66 weeks or 99 weeks, and therefore he regards the fall epidemic as an exception to the rule. In the United States we are now having a recurrence after 66 weeks. It is now exactly 66 weeks since the mortality peak of the 1918 epidemic in Chicago. The same is true for New York City and Washington. In all three of these places influenza is now epidemic. The periodicity suggests that we may be dealing with infecting organisms which not only have the power to reproduce themselves in a virulent form continuously for a long period if susceptible persons are exposed, but which also have the power of developing in cycles of 33 or 66 weeks.

The recurrence might be explained on the hypothesis that immunity has lasted 66 weeks, though the hypothesis does not explain the fact already noticed in some families that those attacked in 1918 are now immune, while those not attacked in 1918 are now contracting the disease. The more reasonable explanation seems to be that the present epidemic is due to a definite cyclical regrowth of the infecting organisms from the seed of the former epidemic.

Definite cycles of development are common in the known vegetable and animal world; some plants flower annually, some biennially; the malarial organism may complete its cycle in two or more days; the locust requires in some cases 17 years. Similarly the organism responsible for our recent pandemic may complete its cycle in 33 weeks or perhaps 66 weeks. This recurrence of the epidemic after 66 weeks certainly strengthens the view that the epidemics of 1889, 1890, 1918, and 1920 all have a common etiology.

Society of Medical History of Chicago.—A meeting of the Society of Medical History of Chicago was held on January 17. An address, "Walter Bailey, the first writer of an Ophthalmic Treatise in English," was delivered by Colonel Casey A. Wood, and "Medical Men and Music," and "Remarks on the Medical History of the War," were discussed by Lieutenant-Colonel Fielding H. Garrison.

Honor for British Physicians.—Honors are reported to have been conferred upon the following British physicians: Sir Bertrand Dawson, physician in ordinary to the king, and dean of the medical faculty of the University of London, has been honored by a peerage. Among those who have been made knights are Dr. J. Court.

who has made researches on diseases of miners; Mr. F. C. Danson, chairman of the Liverpool School of Tropical Medicine; Mr. F. S. Lister, research bacteriologist, South African Institute for Medical Research; and Dr. G. R. Parkin, who has been promoted to the rank of K. C. M. G.

BOSTON AND MASSACHUSETTS.

Week's Death Rate in Boston.—During the week ending February 14, 1920, the number of deaths reported was 508 against 262 last year, with a rate of 32.77 against 17.16 last year. There were 68 deaths under one year of age against 39 last year.

The number of cases of principal reportable diseases were: Diphtheria, 45; scarlet fever, 59; measles, 46; whooping cough, 70; tuberculosis, 47.

Included in the above were the following cases of non-residents: Diphtheria, 6; scarlet fever, 3; tuberculosis, 6.

Total deaths from these diseases were: Diphtheria, 7; scarlet fever, 2; measles, 1; whooping cough, 5; tuberculosis, 28.

Included in the above were the following non-residents: Diphtheria, 2; tuberculosis, 1.

Influenza cases, 2,113; influenza deaths, 139. Pneumonia deaths, broncho and lobar: 116.

Harvard Medical Society.—A meeting of the Harvard Medical Society was held in the Peter Bent Brigham Amphitheatre on Tuesday evening, February 17. Dr. H. S. Kebebjian discussed "The Armenian Situation," and "Studies of Basal Metabolism in Thyroid Adenomata with Hyperthyroidism" were given by Dr. W. M. Boothby.

Italian Medical Society.—At a recent meeting of the Italian Medical Society in Boston, a number of physicians discussed the advisability of physicians being allowed to prescribe alcoholic liquors to their patients. A number of physicians expressed the belief that this practice would result in using the medical profession as a subterfuge for illicit liquor traffic. Dr. Domizia A. Costa is reported to have said that as a layman he was opposed strongly to prohibition, but at a medical man he believed in following the last issue of the Pharmacopoeia, which abolishes the use of liquor for medicinal purposes. Admitting that there are cases where alcoholic stimulation is advisable when the patient has been an habitual user of liquor, he expressed the belief that in the treatment of these cases the amount allowed by law is not sufficient.

Dr. Gaetano Praino, secretary of the society, is said to have expressed his belief that prohibition as provided by law is not absolute, as it permits unscrupulous physicians to prescribe liquor just as they now prescribe narcotics.

The following officers were elected for the coming year: Dr. A. De-Robertis, president; Dr. Gerardo Balboni, vice-president; Dr. Gaetano Praino, secretary; and Dr. Secidio Guarino, treasurer.

Influenza in Boston and Massachusetts.—The report of influenza cases on February 2, in Massachusetts, showed an increase of nearly 400 per cent. in the number of cases for the preceding twenty-four hours. This increase possibly may have been due to the sudden change in weather from extreme cold to unseasonable mildness. The influenza cases numbered 1721, of which 380 occurred in Boston; there were 12 deaths from influenza and 19 from pneumonia. Other cities submitted the following reports:

Waltham, 126; Cambridge, 112; Malden, 67; Lynn, 60; Haverhill, 75; Newton, 55; Needham, 57; Fall River, 36; Attleboro, 30; Belmont, 38; Worcester, 67; Greenfield, 42; Pittsfield, 35; North Adams, 14, and Brockton, 9.

The number of cases in the Connecticut River Valley and on Cape Cod showed a considerable increase, although there had been few cases in these districts up to that time.

The daily report issued on February 3 showed 2206 new cases of influenza in Massachusetts, 634 of which were reported from Boston. The disease continued in a mild form, in spite of the increase of cases. A decrease in cases throughout the state to 1879, with 616 in Boston, with 8 deaths from influenza and 9 from pneumonia, was reported on February 4. Cities in the vicinity of Boston reported the following number of cases:

Worcester	136
Somerville	79
New Bedford	63
Lynn	57
Waltham	57
Malden	55
Belmont	35
Fall River	52

Lowell	44
Milton	40
Cambridge	39
Attleboro	37
Andover	37
Chelsea	28
Framingham	28
Taunton	27

Thirteen deaths from influenza and 14 from pneumonia were included in the report in Boston on February 6. In Cambridge 127 cases were reported, and other cities submitted the following figures: Somerville, 102; Malden, 96; Haverhill, 64; Lowell, 60; Worcester, 57; Lexington, 49; Waltham, 36; Springfield, 33; Amesbury, 31; Sterling, 23; Lynn, 22.

On February 7 there were reported to the state department 1474 new cases of influenza, 405 of which were in Boston. The total number of influeza cases in Boston for the week ending February 7 was 2859, with 66 deaths from influenza and 92 from pneumonia. The shortage of nurses in the city is one of the most serious factors in the situation, and nurses have been urgently asked to volunteer their services during the present time of need. Communities reporting large numbers of cases outside of Boston include the following cities: Cambridge, 97; Haverhill, 77; Wellesley, 57; Malden, 70; Saugus, 44; Lawrence, 42; Worcester, 42; Springfield, 41; Belmont, 37; Somerville, 37; Pittsfield, 31; Fall River, 29; Everett, 28; Holyoke, 21; Beverly, 20.

In Boston there was reported on February 8 the highest death rate from influenza and pneumonia that had occurred up to that time, including 16 deaths from influenza and 14 from pneumonia. A report from Cummington, Massachusetts, on that date stated that more than one-fourth of the enire population was affected by the disease, there being 163 cases of influenza and several of pneumonia. On February 9, 21 deaths from influenza and 30 from pneumonia were reported to the health department in Boston. The state department announced 2002 cases of influenza, 609 of which were reported from Boston. Communities outside of Boston made the following reports: Haverhill, 133; Fall River, 68; Pittsfield, 67; Springfield, 64; New Bedford, 56; Somerville, 54; Cambridge, 49; Worcester, 44; Needham, 37; North Adams, 36; Malden, 33; Winthrop, 32; West Newbury, 30; Lenox, 27.

On February 10, the death rate in Boston reached 18 from influenza and 35 from pneumonia. The report from the state department showed 2225 new cases of influenza, of which 370 were in Boston. From other centers were reported the following figures: Cambridge, 177; Haverhill, 139; Cummington, 110; Becket, 100; Waltham, 92; Lynn, 83; Worcester, 63; Chelsea, 61; Lowell, 61; Adams, 59; Belmont, 53; New Bedford, 56; Somerville, 53; Quincy, 53; Woburn, 46; Springfield, 40; Fall River, 35; Lexington, 32; Lawrence, 31; Fitchburg, 28; West Newbury, 26; Greenfield, 27.

For the week ending February 14 there was a total number of 2113 cases of influenza in Boston, with 139 deaths from influenza and 116 from pneumonia. On February 15 there were reported 22 influenza deaths and 25 of pneumonia, with 219 new cases of influenza. Exclusive of Boston, 913 cases were reported to the state department of health. In Medford there were 82 new cases, New Bedford, Cambridge, and Fitchburg reported 54 each, Worcester 48, Malden 39, Lowell 38, Somerville 33, Waltham, 32, Townsend 30, Brookfield 31, and Lynn 28. Further decrease on February 17 seems to indicate that the epidemic is on the wane in Massachusetts. To the state department there were reported 1065 cases not including 153 in Boston. Haverhill reported 70 cases, and other cities the following figures: Worcester, 68; Lowell, 68; Cambridge, 57; Malden, 49; New Bedford, 44; Amesbury, 36; Lynn, 36; Belmont, 36; Cummington, 30; Littleton, 29; Melrose, 28.

BEQUESTS TO HOSPITALS.—By the will of Sarah L. Newhall of Lynn, the sum of five hundred dollars has been left to the Free Hospital for Women in Brookline and to the Lynn Hospital.

The sum of five thousand dollars was bequeathed to the Newton Hospital by the will of Mr. George B. Knapp of Newton.

To the Choate Memorial Hospital in Woburn fifty thousand dollars has been given recently; but the name of the donor will not be made known until his death.

By the will of Miss Florence D. Boit of Brookline, upon the death of beneficiaries who will receive the income of a trust fund during their lives, the sum of five thousand dollars is to be given to each of the following institutions: Boston Home for Incurables; Boston Nursery for Blind Babies; the Industrial Home for Crippled and Deformed Children; the New England Peabody Home for Crippled and Deformed Children; the New England Home for Deaf Mutes in Everett; and the Convalescent Home for the Children's Hospital, Wellesley Hills.

Nurses' School in Prague.—Two Boston nurses, Miss Marion Parsons and Miss Alotta Lentell, have arrived at Prague to establish a training school for nurses under the auspices of the American Red Cross and the Czecho-Slovak Government. The Red Cross has announced that $20,000 has been appropriated for this work. The American nurses will remain at Prague for three years, and during that time two Czecho-Slovak women will be sent to the United States to prepare themselves to carry on the work. The Massachusetts General Hospital, it has been reported, has agreed to accept the two pupils.

Bequests of Mrs. Mary D. Richards.—The following bequests were included in the will of Mrs. Mary D. Richards of Boston: Home for Incurables, $10,000; Waltham Training School for Nurses, $8,000; Memorial Hospital, Worcester, $5,000; Waltham Baby Hospital, $3,000; Boston Association for the Relief and Control of Tuberculosis, $1,000; Waltham Hospital, $1,000.

Plymouth Hospital Expenses.—The expenses of the Plymouth County Tuberculosis Hospital from June 2, to December 31, 1919, amounted to $16,010.40, one-third of which was assessed upon Brockton. The balance of $10,673.60 has been apportioned as follows: Abington, $465.33; Bridgewater, $484.72; Carver, $203.58; Duxbury, $378.08; East Bridgewater, $344.15; Halifax, $67.86; Hanover, $256.90; Hanson, $179.35; Hingham, $824.03; Hull, $824.03; Kingston, $193.89; Lakeville, $135.72; Marion, $659.23; Marshfield, $256.90; Mattapoisett, $252.05; Middleboro, $601.86; Norwell, $145.42; Pembroke, $130.87; Plymouth, $1,473.50; Plympton, $53.32; Rochester, $106.64; Rockland, $615.61; Scituate, $587.43; Wareham, $654.38; West Bridgewater, $198.74; Whitman, $610.75.

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Dr. Henry C. Tracy of Marquette Medical School has received an appointment as professor of anatomy at the University of Kansas.

The Massachusetts Medical Society.

STATED MEETING OF THE COUNCIL.

February 4, 1920

A stated meeting of the Council was held in the Boston Medical Library, Wednesday, February 4, 1920, at 12 o'clock, noon. The President, Dr. Alfred Worcester, was in the chair and the following 48 Councilors present:

Barnstable,
  W. D. Kinney.
Bristol North,
  H. G. Ripley.
  A. R. Crandell, V.-P.
Bristol South,
  E. F. Cody.
Essex South,
  W. T. Hopkins.
  C. H. Bangs.
  J. F. Jordan.
Middlesex North,
  E. G. Livingston.
Middlesex South,
  E. H. Bigelow.
  F. G. Curtis.
  C. E. Hills.
  A. A. Jackson.
  C. E. Mongan.
  W. D. Ruston.
  E. H. Stevens.
  A. K. Stone, Treas.
  Fresenius Van Nüys.
  G. L. West.
  Alfred Worcester, Pres.
Norfolk,
  E. H. Brigham, Libra.
  G. W. Clement.
  G. W. Kaan.
Plymouth,
  W. C. Keith.
  A. E. Paine.
Suffolk,
  J. W. Bartol.
  E. S. Boland.
  F. J. Cotton.
  L. J. Cummins.
  Lincoln Davis.
  W. E. Faulkner.
  C. M. Green.
  G. S. Hill.
  H. B. Loder.
  R. W. Lovett.
  R. H. Miller.
  Stephen Rushmore.
  G. G. Smith.
  R. M. Smith.
Worcester,
  W. P. Bowers.
  M. F. Fallon.
  Homer Gage.
  J. O. Généreux.
  R. W. Greene.
  E. L. Hunt.
  W. L. Johnson.
  G. O. Ward.
  F. H. Washburn.
  S. B. Woodward.

On nomination, duly seconded, Dr. James S. Stone was elected Secretary *pro tempore*. The reading of the record of the last meeting was omitted by vote and the record, as printed in the Proceedings, adopted.

Dr. R. H. Miller, Chairman, read the report of the Committee of Arrangements for the Annual Meeting, which was set for June 8-9.

He stated that no radical changes from the meetings of the recent past were contemplated. The increased cost compelled an estimated expense of $3,850. It was recommended that the members attending the dinner be charged $2.00 instead of $1.00 as heretofore, in order to offset the increased expense.

It was voted to accept the report of the Committee of Arrangements for the Annual Meeting and lay it on the table until the reports of the Treasurer and the Committee on Membership and Finance had been presented.

Dr. C. M. Green, Chairman, read the report of the Committee on Membership and Finance, as to membership.

Report of the Committee on Membership and Finance, as to Membership

The Committee on Membership and Finance makes the following recommendations as to membership:

1. That the following named Fellows be allowed to retire, under the provisions of Chapter I, Section 5, of the by-laws:

Comey, Perley Pierce, of Augusta, Georgia.
Paine, Amasa Elliot, of Brockton.
Rogers, Orville Forrest, of Dorchester.
Rogers, Frank Alvin, of Everett.
Smith, Mary Almira, of Boston, as of December 31, 1920.

2. That the following named Fellows be allowed to resign, under the provisions of Chapter I, Section 7, of the by-laws:

Abbot, Edward Stanley, of Philadelphia (1301 Spruce Street).
Averell, Charles Wilson, of Akron, Ohio (459 East Exchange Street).
Cockett, Marguerite Standish, of Paris, France.
Dearborn, Henry Hale, of Milford, New Hampshire.
Foster, Ellis Edwin, of St. Petersburg, Florida.
Gould, Chester Harlow, of Pasadena, California (1165 No. Mich. Ave.).
Hagopian, Levon George, of Lynn (26 South Common Street).
Hoit, Henry Ambrose, of Pasadena, California (1110 No. Mich. Ave.)
Loewe, Walter Ralph, of Bronx, New York (2245 Webster Avenue).
Neff, Irwin Hoffman, of Boston (3 Fayette Street). Is leaving for Michigan.
Persky, Myer Arthur, of Providence, Rhode Island.
Richards, Caroline Maria, of Cambridge, with remission of dues for 1918, 1919, and 1920.
Rogers, Orville Forrest, Jr., of New Haven, Connecticut (116 High Street).
Thompson, William James, Hudson River State Hospital, Poughkeepsie, Station B, New York.
Shepard, William G., of Ellington, Connecticut.
Van deVelde, Honoré, of 72 Huntington Avenue, Boston. Is returning to Belgium.

3. That the following named Fellows be allowed to change their district membership, without change of legal residence, under the provision of Chapter III, Section 3, of the by-laws:

Champion, Merrill Edwin, from Norfolk South to Suffolk.
Gallison, James Murry, from Norfolk to Suffolk.
Leland, George Adams, Jr., from Norfolk to Suffolk.
Young, Evangeline Wilson, from Middlesex South to Suffolk.

For the Committee on Membership and Finance,
Charles M. Green, *Chairman.*

The report of the Committee on Membership and Finance, as to Membership was accepted and adopted.

The President read the report of the Committee appointed to consider the petition of Dr. Alvah H. Warren of Everett for restoration to the Society. It recommended his restoration provided he pay his indebtedness to the Society within one month of February 4, 1920. The report of the Committee was accepted and its recommendations adopted.

The President nominated the following four committees to consider petitions for restoration to the Society and they were duly appointed by vote:

1. For N. M. Crofts—H. B. Holmes, J. H. Riley, H. J. Millard.
2. For C. H. Keene—T. J. Eastman, G. P. Denny, R. S. Eustis.
3. For T. L. Jenkins—C. G. Bailey, C. K. Blair, Byron Sanborn.
4. For W. J. Stickney—H. E. Sears, R. E. Stone, L. C. Swan.

Reports of the Treasurer, the Certified Public Accountant and the Auditing Committee were read by Dr. A. K. Stone.

A motion to accept and adopt the reports was seconded and carried.

Dr. C. M. Green, Chairman, read the report of the Committee on Membership and Finance as to the Budget.

Dr. S. B. Woodward: Is it proper to ask a question about this budget at this time?

The President: Certainly.

Dr. S. B. Woodward: I would like to call attention to one thing and that is the increase in the amount of the appropriations. The expenses of the president have remained at $100 for several years. I know that when I was president I suffered from that. I am sorry to say that I was obliged to foot as much of the expenses of the president as I could, being chairman of the Committee on State and National Legislation and therefore with many duties to perform. I think if any member of the Society should figure out the legitimate expenses of the president, he would find that it is absolutely impossible to get along on $100. It certainly cost me twice that amount to get around and do the absolutely necessary work of the president. It seems to me that the allotment for the president ought to be more than $100.

I would like to inquire about the appropriation of the Committee on State and National Legislation: That appropriation has been $250 for several years, and that Committee has spent only $50. I wonder if there is any reason for the request for the larger appropriation of $720 for the coming year.

The President: The Committee on State and National Legislation has voted to employ an agent, to keep in touch with legislation and to aid in publicity. On motion, duly seconded, the Budget was adopted by vote.

Dr. G. W. Kaan: Is it proper to discuss the question of the disposal of the balance of $2,500?

The President: Yes.

Dr. G. W. Kaan: I would like to speak in reference to the disposal of the $2,500, as treasurer of the Norfolk District Medical Society and having to do with the expenses of their meetings and also with the refund of this fund. We have found in our district that in order to get a large attendance it is necessary to do something besides furnish a good speaker, so we provide a collation, and our meetings cost $100 a month, reckoning cigars, printing, and dinner. In our district at our annual meeting we expect to go to the American House and pay so much per plate and charge the members a dollar, so the expenditures of the Society will be $1.50.

Now in addition to this refund which we get from the State Society we asked the members to contribute a dollar each, and with all that we barely get through. It seems to me that the local societies and the State Society through the local societies get much advantage from these local meetings. They get far more benefit from them than from the annual dinner at the Copley-Plaza. We must consider the question of whether men will want to spend two dollars instead of one dollar for the annual dinner.

I move that the $2,500 be appropriated as in the past as a dividend for the District Societies.

Dr. G. O. Ward: I second the motion.

The President: It has been moved and seconded that the $2,500 balance which the treasurer according to the budget places at the disposal of the Council, be distributed to the district societies. Of course, you realize that will be leaving the Committee of Arrangements for the Annual Dinner without a cent. Is there anything further to be said?

Dr. Ward: I beg to call your attention to the benefits of this dividend pro rata to the district societies. Taking the Worcester District Medical Society as a sample, this annual rebate furnishes funds for the annual meeting for which we have no other source of income. If no dividend is made, we have to choose between no meeting and a special assessment. Second, this meeting furnishes an incentive for the district treasurer to dun the fellows for dues. Under the by-laws a fellow is in good standing until he is three years in arrears and the Council has acted. You see what the abandonment of this custom will bring. Then the subscription list of the Boston Medical and Surgical Journal is made on the basis of dues, and the mailing list is made up on March 1. Every tardy payment makes confusion naturally result. The alternative suggested, if no rebate is made, is a special assessment on the district societies if they are to continue their activities. There are two ways to do it: to print bills of the regular amount and try to collect them. If you know the temper of the fellows, you know that some demur at a double due and perhaps only pay the compulsory part and let the other go indefinitely. The other way is to collect a local assessment, leading to a double set of books.

Finally, my opinion is that this rebate provision cannot be improved upon. It is an essential factor in the prosperous condition of the local treasuries as well as of the State Society.

Dr. C. H. Bangs: It seems to me that the question comes down to where the growth and activities of the Massachusetts Medical Society center, whether they center in the local societies or in the annual meeting. It seems to me that the recruiting ground in the Massachusetts Medical Society is in the district societies, and according to the success of the district society meetings there is developed the local interest and the progress, and the local increase in membership. When I first became active in the affairs of the Essex South District Medical Society, an investigation of the books showed that we had had an average attendance of ten at the meetings previous to that time. Since that time there has been a concerted effort to make the attendance larger by introducing speakers of national repuation as often as possible, frequently speakers of international reputation from distant societies have been called, and we have doubled the average attendance and we have often had one hundred present at a meeting. I think that the interests of the Society lie very materially in not lowering the appropriations that go to the district societies. I do not feel that the membership in the Society is very materially increased by the annual dinner. I think if we are to make the choice between the appropriations for the annual dinner and the appropriations which go to the district societies we should make those appropriations for the district societies. Our district society does not begin to pay expenses; we have an extra assessment made on the members; we meet it cheerfully by collecting a fund we can draw upon, and I think no society has made greater progress than the Essex South District Society by carrying out that policy.

In response to a question as to the amount of the dividend in the past, Dr. C. M. Green said it was $2,500. It used to be $4,000. Then it was cut down and in the last few years it has been $2,500. Of course, the amount received varies; the greatest amount goes to Suffolk, then Middlesex South, then Norfolk, and Worcester the fourth; the amount varying, some getting only a small sum of money.

Dr. R. H. Miller: Of course, Mr. President, if all of this $2,500 is allotted to the district societies, that means that there must be a radical departure in the conduct of the annual meeting. It has got to be different from what it has been in the last few years, except in 1918, when most of the meetings were held in this building. I think if we gave up all the attractions of the annual meeting such as we have had in the past few years, it will detract from the number of men that will come. Of course, the general consensus of opinion should guide us in what we are going to do, and it is going to make it difficult to run the annual meeting if we are not going to have any funds with which to run it. I think the annual dinner attracts a great many men here and I think it ought not to be abandoned.

The President: Of course, I am influenced by the fact that I have got to run the annual dinner, and it will make it extremely difficult to run it if we are not going to have any money. Of course we must have an annual meeting if with no other attractions than meetings in this building.

Dr. C. M. Green: I might say that last year we faced a similar difficulty; and the committee suggested three different plans. One of the plans was to give the Committee of Arrangements $500, which would enable them to cover the expenses without a dinner. Of course, if there is to be a pop concert, it will cost more.

The President: The motion is to distribute $2,500 to the district societies. I understand that would leave no appropriation for the annual meeting.

Dr. C. M. Green: Dr. Stone says that we have a contingent fund of $600. That is on the Committee report. But on the other hand, we have the expenses of the delegates to New Orleans; if we send them we have to pay their bills. Of course, times have changed. I remember when some of the delegates received nothing from the Society. A delegate went anywhere he was sent and made no charge; but times have changed. Now everybody wants to be paid, so everything must be different with our budget. There is a fund of $600 appropriated for contingent expenses; but suppose the expense of defending malpractice suits costs $600 to $900. Those bills have to be paid. We have to remember that last year there was a deficit of $1,400. That amount was spent by the treasurer out of the fund which he supposed he was relying on for income. But it would be possible for the Committee to have $500 for the necessary expenses of the annual meeting, omitting the festivities, and still have $2,000 for the District Societies.

It will be noted that while the Committee does not make a motion now, I was instructed to say that in view of the increased cost, they think it necessary to increase the annual dues to $7.00 in 1921.

Dr. S. B. Woodward: Of course, one of the great expenses of the Society is the expense connected with the Boston Medical and Surgical Journal. I noticed that that was increased over the amount expended last year. I wonder if it is possible to save anything on that. I have not the figures that were read.

Dr. A. K. Stone: Dr. Woodward inquired why there was an increase in the budget in connection with the Boston Medical and Surgical Journal. That was based on the number of members who receive the Journal. The vote of the Council was that for each member in good standing $3.00 should be paid for the Journal. If a man does not pay his dues on the first of March, he does not receive the Journal.

Dr. S. B. Woodward: There may be a deficit?

Dr. A. K. Stone: It is possible, though last year was one of uncertainty. The district treasurers could not tell how much money they were going to get. And this year it is hoped that conditions will be better, because now everybody is back and will pay his dues.

Dr. C. M. Green: Everybody has his income cut in two by the dollar being worth but fifty cents. We are paying this year $6.00 for all the activities; and our dues should really be $10.00 a year in order to have the Society live.

Dr. A. K. Stone: The members of the Society are pretty nearly all in good standing at the present time. If those who went to war, had back dues, these have been paid into the district treasuries. Such dues were paid by the district societies very largely. Then last year everybody staying in service was exempt, and therefore in good standing, so that we start the year with pretty nearly everybody in good standing, but how we will come out at the end of the year is another matter.

I would suggest the cutting of the $2,500 to $2,000,—that is, cut down the dividend to the district societies just so much and let the Committee of Arrangements have $500.

The President: The Council has under consideration the motion that $2,500 be given to the district societies. The question is: Shall the $2,500 be distributed among the district societies?

Dr. R. H. Miller: If each district society spends between $500 and $600 during the year in its meetings and dinners, and if each society is given a proportion of this $2,500, if we divide it up evenly, which of course is not done exactly, it will get $138. That means if the societies were to spend $600, it would leave each to raise for itself $462.

I feel very strongly that the giving of this $2,500 and taking it away from the annual meeting is going to change the annual meeting to such an extent that a good many men who would otherwise come will not come. I believe it will cut the number down to 300. I am strongly against that. I feel that the annual dinner is a very important thing, and I think that to give up that and to give $138 to each district society is a great mistake.

The President: The question is: Shall the $2,500 be distributed among the district societies?

On a standing vote the motion was lost, the vote being 17 in favor and 20 opposed.

The President: The motion having been lost to distribute $2,500 to the district societies, what is your pleasure? Have you anything to say as to how that money shall be used or are you ready to take from the table the report of the Committee of Arrangements?

Dr. W. P. Bowers: I would like to say a word on the dinner. I am sorry that the motion was lost. I do not feel that men come to the annual meeting for the dinner; in the old days they did. This year they have got to pay at least $2.00 for the dinner, and I think it is a poor thing if we can't have a meeting of the Massachusetts Medical Society without a pop concert or a dinner to bring them in. It seems to me that if we arrange a good program, it will bring the men here. I think we ought to conduct the meeting as economically as possible.

Dr. S. B. Woodward: I would like to explain why I voted against the distribution of this $2,500 and I would like to make a motion. Apparently the distribution of the $2,500 would have left the Committee without a cent to prepare for any meeting. I do not believe with the last speaker that we should have a meeting without a dinner.

I move that we distribute $2,000 as a dividend, instead of the $2,500, and that $500 be given to the Committee of Arrangements.

Motion seconded and carried.

Dr. W. P. Bowers: Apparently there is some misconception as to the activities of the Society. There seems to be a diversity of opinion as to the value of belonging to the Massachusetts Medical Society, and the vote for the distribution to the district societies was a most important measure. If that had been defeated, there would have been almost a revolution in the Massachusetts Medical Society. I say that from knowledge of conditions outside of the eastern part of the State. There has been developing in recent years a very strong feeling against certain customs in conducting the annual meetings, and many of the remote societies have felt very sensitive in the last few years because they have felt that they have not been generously treated. So I am glad that $2,000 has been given to them, while $2,500 has been denied.

Now, when it comes to the annual meeting, while the scientific part is important, the social feature is also important; it is my opinion that the Society should not omit the social feature of the annual meeting. But it seems to me unwise to assess the remote districts for the expenses of the annual meeting. Therefore it is very much wiser to continue the annual dinner and pop concert, but to have the participants pay the expense, and to have them pay the whole expense. We shall have a very much smaller number at the annual dinner, but the people who attend will feel that they are paying their own expense and not assessing it on the members at large.

So I make a motion that we continue to have the annual dinner and that the members who participate pay the entire cost.

Dr. S. B. Woodward: I was going to make a motion to that effect, and I wish to endorse everything that Dr. Bowers said, and I second his motion.

The President: It has been moved and seconded that the Committee of Arrangements provide the annual dinner and that the expense be divided among those who attend.

Motion carried.

The President: We will hear from Dr. Gage, chairman of the Committee on Revision of the By-Laws.

Dr. Homer Gage: The previous edition of the by-laws has been exhausted, and a new edition must be printed. Copies of the revised draft have been sent to the Councilors. There are very few changes, no radical changes. The sections having to do with discipline and the code of ethics have been revised by the aid of the Committee on Ethics and Discipline, and suggestions from the various officers and standing committees have been incorporated. Dr. Gage read several passages of the new draft and compared them with the existing by-laws.

The President: What is your pleasure with regard to this report?

Dr. Ward offered some suggested changes in phraseology in Section 1, Chapter I; Section 3, Chapter III, and Section 3, Chapter V. These were read and adopted.

In reply to a question as to whether lodge practice, which is condemned by the code of ethics of the American Medical Association, is permitted by the proposed code, Dr. Homer Gage stated the Committee had been very cautious. There are some things too hot to handle. Our Code of Ethics has never corresponded exactly with the code of ethics of the American Medical Association, and whenever we have tried to make it so, we have got into a long dispute; and we felt that putting it in this way, simply to apply general rules, is better than to give detailed instruction as to conduct in all possible conditions. We have taken the Code of Ethics exactly as we have always had it and have not changed it in any way except to take out redundant phrases, making it read exactly as it did before. I do not think the Committee would be willing to accept and recommend the Code of Ethics of the American Medical Association.

Dr. Bangs: Referring to Section 4, at the top of page 17, in the draft of the by-laws, after specifying that the Committee on Ethics and Discipline shall consist of five members and any charge shall be in writing, the language reads: "It may also on its own initiative investigate any case of alleged misconduct on the part of a fellow if deemed advisable and report its findings." The question that arises is as to the phrase, "if deemed advisable." A committee of five is authorized to investigate under their own initiative any member. Should it not be compulsory upon them to make that report to the president? It seems to me that if a matter is sufficiently important for a committee of five to take up, that their findings should be reported to the Society. If it is a matter of exoneration against a member of the Society, that member is entitled to have it placed on record. If it is a case of discipline, that should be placed before the Society.

Dr. Homer Gage: The committee may also investigate and report cases. "They may" is the language used, and the only thing we have added is that if they are going to recommend any disciplinary measure, they must report.

Dr. Bangs: "And if deemed advisable." It seems optional with the committee whether they shall report or whether a charge shall be stifled in committee.

Dr. Homer Gage: Your idea is that the Committee ought to report any way, either conviction or not.

Dr. Bangs: Yes.

Dr. Homer Gage: It seems to me that that is a very unwise thing. There are a lot of petty things that come up, which it seems to me should not be made matters of record, little bits of gossip, unfounded charges, jealousies, etc.

Dr. S. B. Woodward: In the past I have been myself a member of the Committee on Ethics and Discipline, and it seems to me that it is unwise to require the committee to report nine-tenths of the things that come up, for they are unimportant.

A motion to approve the by-laws with the changes in phraseology as noted was seconded and carried.

The report of the Committee on Medical Education and Medical Diplomas, furnishing a new list of medical schools and colleges, diplomas from which are accepted from applicants for fellowship, was presented by the President, who stated that copies had been sent to the Councilors. A motion to accept the new list of medical colleges was seconded and carried.

The President made the following nominations of members as delegates to the annual meetings of New England medical societies and they were duly appointed by vote:

Maine: Charles H. Bangs, Fred M. Stiles.
New Hampshire: Fred R. Jouett, A. W. Dudley.
Connecticut: Oliver H. Howe, D. E. Baker.
Rhode Island: Wallace C. Keith, Arthur L. Beals.

Dr. W. P. Bowers: We have with us two gentlemen who I understand wish to make some remarks. I move that the privilege of the floor be given to Dr. Stetson of Greenfield and to Dr. Lund of Boston. So voted.

Dr. H. G. Stetson: Dr. Lund and I are two of your delegates to the House of Delegates of the American Medical Association, and have been for some time past. In the past year I personally, and I think Dr. Lund also, have been asked by delegates, "When are we coming to Boston?" And there immediately follows an expression of the appreciation of the good time the Association had in Boston in 1906. This year the Association meets in New Orleans. Next year they will probably come east, and the year following they will go west again. It seems to me that if the Massachusetts Medical Society is desirous to have the American Medical Association meet in Boston, the meeting in 1921 would be an opportune time. I can say positively that the House of Delegates would not consider coming to Boston without an invitation direct from the Massachusetts Medical Society; and while I am not in any way, or is Dr. Lund, urging you to have the American Medical Association meet in Boston, at the same time we both feel that if it is your desire to have this assaciation meet in Boston next year or very soon, that this is a very opportune time to express the desire. I feel sure that if it became voiced in the House of Delegates that Boston was anxious to have the meeting held here in 1921, that practically every other city would be dropped out of consideration. And it is my purpose to bring that to your attention, if you desire it to say so, and if you don't desire it, to be frank in saying so, but I have asked for the time to bring it to your attention. Dr. Lund and I appreciate that the Massachusetts Medical Society should not take definite action without careful consideration and without talking the matter over with those medical societies which have a membership in Boston, because they are the ones to take active concern in it, but that can be arranged through committees.

Dr. F. B. Lund: I know the American Medical Association would like to come to Boston. If the Council will vote to invite the American Medical Association to Boston, and the Suffolk District Medical Society will second it, then Dr. Stetson and I, who are going to New Orleans, can extend a hearty invitation. We want to get them next year; if not, we may get them three years from now.

On motion by Dr. Lovett, it was voted unanimously that the delegates to the next meeting of the House of Delegates of the American Medical Association are instructed, in case this project is approved by the Suffolk District Medical Society, to invite the American Medical Association to meet in Boston in 1921.

Dr. R. W. Lovett spoke of the importance from a medical point of view of the bill before Congress providing for Universal Military Training. He felt sure that safeguards were provided against contagious diseases and mentioned the advantages to be derived from the detection of defects through physical examination. The incidental advantages to the medical profession through training in military matters was also mentioned.

It was moved and voted to request the Committee on State and National Legislation to endorse from a medical point of view the bill for Universal Military Training now before Congress.

Adjourned at 1.55 p.m.

James S. Stone,
Secretary pro tempore.

TREASURER'S REPORT.

Showing the Assets and Liabilities of the Massachusetts Medical Society December 31, 1919

Schedule A.

ASSETS.

Cash.		
New England Trust Co.	$275.01	
Old Colony Trust Co.	3,259.44	$3,534.45
Investments		
Shattuck Fund		
Annuity Policy Mass. Hospital Life Ins. Co	9,166.87	
Phillips Fund		
Mass. 3½% Gold Bonds .	10,000.00	
Cotting Fund		
Deposit in Institution for Savings in Roxbury and Vicinity	1,000.00	
Deposit in Provident Institute for Savings in the Town of Boston	1,000.00	
Deposit in Suffolk Savings Bank for Seamen and Others, Boston	1,000.00	
Permanent Fund		
Annuity Policy of Mass. Hospital Life Ins. Co. ..	11,253.30	
Mass. 3½% Gold Bonds	6,000.00	
Deposit in Franklin Savings Bank of the City of Boston	1,074.48	
Liberty Bonds—First Issue 3½%	5.000.00	$45.494.65
Total		$49,029.10

LIABILITIES.

Endowment Funds		
Shattuck Fund (G. C. Shattuck, 1854. Balance, 1866)	$9,166.87	
Phillips Fund (Jonathan Phillips, 1860)	10,000.00	
Cotting Fund (B. E. Cotting, $1,000, 1876, 1881, 1887) ..	3,000.00	$22,166.87
Surplus		
Balance January 1, 1918 ..	28,335.56	
Deficit for the year. *Schedule B*	1,473.33	26.862.23
Total		$49,029.10

Liberty Bonds representing the investment of the Fund for a Professorship of Military Medicine were returned to the donor June 12, 1919 as directed by vote of the Council.

Statement Showing the Current Account of the Massachusetts Medical Society for the Year Ending December 31, 1919.

Schedule B.

CREDIT.

Assessments paid to District Treasurers		
Barnstable	$144.00	
Berkshire	377.00	
Bristol North	303.00	
Bristol South	710.00	
Essex North	800.00	
Essex South	1,097.00	
Franklin	168.00	
Hampden	787.00	
Hampshire	291.00	
Middlesex East	357.00	
Middlesex North	279.00	
Middlesex South	2,788.00	
Norfolk	2,180.00	
Norfolk South	374.00	
Plymouth	524.00	
Suffolk	3,396.00	
Worcester	1,493.00	
Worcester North	377.00	$16,445.00
Assessments paid to Treasurer	1,012.00	
Paid at Annual Meeting	144.00	
Total	1,156.00	
Less return of overpaid assessments	38.00	1.118.00
Total Assessments (carried forward)		$17,563.00

Total Assessments (brought forward)		$17.563.00
Dinner Tickets		490.00
Income Shattuck Fund		412.51
Income Phillips Fund		
Massachusetts 3½% Gold Bonds		350.00
Emmons and Associates Fund (Balance Jan. 1, 1919)		452.25
Income Cotting Fund		
Interest—Institution for Savings in Roxbury and its Vicinity	40.00	
Interest—The Provident Institution for Savings	65.45	
Interest—Suffolk Savings Bank	40.00	145.45
Income Permanent Fund		
Annuity Policy Mass. Hospital Life Ins. Co.	506.40	
Mass. 3½% Bonds	210.00	
Interest—Franklin Savings Bank	48.32	
Liberty Bonds 3½% First Issue (2 years)	350.00	1,114.72
Income from Deposits in Banks		
New England Trust Co.	171.28	
Old Colony Trust Co	63.99	235.27
Total		$20.763.20

DEBIT.

General Expense				
President's Expense			$90.65	
Secretary's Expense			666.98	
Treasurer's Expense			271.38	
Librarian's Expense			34.42	
District Treasurer's Expense			1,017.13	
Supervisors' Expense			18.54	
Censors' Expense			476.61	
Rent			750.00	
Salaries			2,000.00	
Delegates' Expense			179.88	
Boston Medical and Surgical Journal				
Guarantee			9.711.50	
Shattuck Lecture, 1917 and 1919			400.00	
Committee Expense				
Arrangements		$2.262.88		
State and National Legislation		45.16		
Ethics and Discipline		9.36		
Public Health	$107.17			
Emmons and Associates Fund	452.25	559.42	2.876.82	
Annual Dividend to District Societies			2.500.00	
Defence of Malpractice Suits			$25.63	
Cotting Lunches			416.99	$22.236.53
Deficit				$1 473.33

ARTHUR K. STONE, *Treasurer.*

RECONCILIATION BETWEEN THE PROFIT AND LOSS AND BUDGET FOR THE YEAR ENDING DECEMBER 31, 1919.

		Profit and Loss Account	Budget Estimate	Difference Loss	Difference Gain
Revenue					
Assessments	$17,563.00				
Investments	2,257.95				
Total Society Revenue		$19.820.95	$21,000.00	$1.179.05	
Emmons and Associates Fund		452.25			
Dinner Tickets		490.00			
Total as per Auditor's Report		$20.763.20			
Expenses					
Salary of Officers		$2.000.00	$2.000.00		
Expenses of Officers					
President		90.65	100.00		9.35
Secretary		666.98	600.00	66.98	
Treasurer		271.38	150.00	121.38	
Librarian		34.42	20.00	14.42	
District Treasurers		1,017.13	1,200.00		182.87
Supervisors		18.54	30.00		11.46
Censors		476.67	300.00	176.61	
Delegates		179.88	300.00		120.12
Rent		750.00	750.00		

Boston Medical and Surgical Journal	9,711.50	9,100.00	611.50	
Defense of Malpractice Suits	825.63	600.00	225.63	
Shattuck Lecture	400.00	200.00	200.00	
Cotting Lunches	416.99	250.00	166.99	
Standing Committees				
Membership and Finance		5.00		5.00
Ethics and Discipline	9.36	25.00		15.64
Medical Education and Medical Diplomas		50.00		50.00
State and National Legislation	45.16	250.00		204.84
Public Health				
Total Expenditures	559.42	200.00		92.83
Emmons and Associates Fund		452.25		
Committee of Arrangements for Annual Meeting	2,262.88	2,000.00		227.12
Proceeds from Sale of Tickets		490.00		
Dividends to Societies	2,500.00	2,500.00		
Contingent Expenses		370.00		370.00
Total	$22,236.53	$21,942.25	$2,762.56	$1,289.23
Budget for 1919		21,000.00		
Emmons and Associates Fund		452.25		
Sale of Tickets to Annual Dinner		490.00		
Total		$21,942.25		
Net Deficit	1,473.33			1,473.33
			$2,762.56	$2,762.56

REPORT OF AUDITING COMMITTEE.

January 30, 1920.

We have this day examined the securities of the Society in the safe deposit box of the Bay State branch of the Old Colony Trust Company, and find them correct as listed. The report of the certified accountant we accept and submit.

Charles H. Hare,
Cornelius J. McCormick,
Auditors.

LETTER OF CERTIFIED PUBLIC ACCOUNTANT.

Boston, January 29, 1920.

Dr. Charles H. Hare, Dr. C. J. McCormick,
Audit Committee, Massachusetts Medical Society,
Boston, Mass.

Gentlemen:

In accordance with your instructions I have audited the books and accounts of your treasurer, Dr. Arthur K. Stone, for the year ending December 31, 1919, and enclose herewith,

Schedule A Statement showing the Assets and Liabilities of the Massachusetts Medical Society, December 31, 1919.

Schedule B Statement showing the Profit and Loss Account of the Massachusetts Medical Society for the year ending December 31, 1919.

The cash on deposit with the banks has been reconciled with the bank statement and found to be correct. Disbursements have been verified, postings to the ledger checked, and trial balance found to be in balance. I have not examined the securities in the safe deposit vaults of the Society.

Respectfully submitted,
Horace C. Hartshorn,
Certified Public Accountant.

BUDGET.

The Committee on Membership and Finance submits and recommends the adoption of the following budget for the fiscal year 1920:

Income

Estimate of the Treasurer $22,600

Appropriations for Expenditures

Salaries of Officers:				
Secretary	$800			
Treasurer	500			
Librarian	400			
Editor	300			
		$2,000		
Expenses of officers:				
President	100			
Secretary	750			
Treasurer	200			
Librarian	50			
District Treasurers	1,200			
Censors	300			
Supervisors	30			
Delegates to annual meeting of A.M.A.	300			
		2,930		
			$4,930	
Rent of accommodations at the Medical Library			750	
Boston Medical and Surgical Journal (appropriated in October)			10,500	
Defense of Malpractice Suits			600	
Shattuck Lecture			200	
Cotting Lunches			400	
Standing Committees:				
Membership and Finance		$ 5		
Ethics and Discipline		25		
Medical Education and Medical Diplomas		250		
State and National Legislation		720		
Public Health		700		
			1,700	
Special Committees:				
Industrial Insurance		50		
Revision of By-Laws		350		
			400	
Contingent Expenses			620	
Unappropriated balance			2,500	
				22,800

In this budget no provision is made for the expenses of the annual meeting or for paying a dividend to the District Societies. In the judgment of the Committee it seems wiser to leave to the Council to determine what use to make of the unappropriated balance, in view of these two claims on the resources of the Society.

In view of the increased cost attending all the activities of the Society, the Committee foresees the necessity of increasing the annual dues for the year 1921.

For the Committee on Membership and Finance.
Charles M. Green, *Chairman.*

Miscellany.

NEW ENGLAND WOMEN'S MEDICAL SOCIETY.

In June, 1919, there died in Boston a leading woman physician, Dr. Sarah Bond Frasier. She touched the life of the community at many points: as active practitioner, as lecturer at schools and college, as medical examiner, as consultant, as senior hospital officer.

The New England Women's Medical Society, which she recently served as president, converted one of its meetings into a memorial to her, and voted to inaugurate a permanent memorial to her of an educational nature.

The speakers at this meting brought out in vivid and touching detail the attributes that made her a great physician and a beloved adviser. Among them were the thoroughness and accuracy necessary to science, the tact that can dominate without giving pain, the courage that speaks the unwelcome word when necessary, and the sympathy that makes it tolerable. Through them all ran the humility that always laughed away any suggestion of superiority in skill or judgment.

Her office was a crowded place, and her office hours interminable. To every expostulation against such lavish personal attention, she replied, "But I sent them away happy"; and to her this was unanswerable.

Her life service culminated in a year's work for the government, when she lectured, under federal auspices, to factory girls in several states on the problems of social hygiene. In this service she acquired the sickness that led six months later to her death.

Throughout the community her death has caused a deep sense of loss: among patients and students from whom a life-long friend and counselor has been taken; among physicians, who know only too well that her skill in diagnosis and treatment will not soon or easily be replaced.

The local society of women physicians asks Dr. Frasier's friends and patients to unite in placing in its hands a sum of money which shall continue the medical education of women who shall be considered her worthy representatives. The sum of $5,000 will provide a scholarship in a medical school, and make possible for other brave and eager young women the training which she herself procured at the hardest. A lesser sum would pay for a desk in a research laboratory, where individual creative work would be done in her name. Any public memorial to her would bear the name Sarah Adams Bond, under which she did most of her work.

The treasurer of the central committee is: Mrs. A. W. Goodnow, 27 Burroughs Street, Jamaica Plain, Mass.

From her colleagues in medicine and education, from all who appreciate the work of women in medicine, and from the host of those whom she "sent away happy," we ask gifts ranging from the smallest unit upward without limit. By investing such gifts in the training of youth for similar service, we shall make sure that her influence in the community shall never fail.

Alice H. Bigelow, M.D., *Chairman*,
Anna G. Richardson, M.D.,
Margaret Noyes Kleinert, M.D.,
Miss Marguerite Sanderson,
Mrs. Albert W. Goodnow.

Make checks payable to Henrietta F. Goodnow, 27 Burroughs St., Jamaica Plain.

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SEGREGATION OF THE FEEBLE-MINDED.

Feeble-mindedness is sapping the vital forces of the nation; to cure this evil, community control, through identification, registration, instruction, supervision, and segregation, are necessary. In this connection, George A. Hastings, executive secretary of the mental hygiene committee of the State Charities Aid Association of New York, is reported to have spoken as follows before the National Conference of Social Work:

"A complete census of the feeble-minded in this country has never been taken, but it is estimated that there is one feeble-minded person to every 250 of the population, or approximately 400,000 in all. About 12,000 men have been rejected from the new national army on account of nervous and mental disorders; and one-third of these were rejected on account of feeble-mindedness.

"The community must awaken to the importance of controlling feeble-mindedness, or the increasing burden of crime, inefficiency, disease, immorality and poverty resulting from it will stagger coming generations. The effect of the prevalence of feeble-mindedness on the effective man-power of the nation, in the light of the national army figures, can scarcely be called negligible.

"It is becoming more and more evident that the proper place to discover the feeble-minded is in the schools. Here their condition can be diagnosed and instruction suited to their capabilities provided, or, if they are to require supervision or segregation for life, this can be obtained before they have gone out into the community and come in conflict with the law and society and become criminal, immoral, diseased or paupers.

"New York state alone has an estimated feeble-minded population of about 35,000.

"A practical working program for the various states which would take them a long way on the road to a solution includes:

"Awakened public knowledge and conscience through making the facts about feeble-mindedness more generally known.

"Placing squarely up to each state its responsibility for dealing with the problem.

"A central registration of all feeble-minded in the community.

"Establishment of institutions and schools for segregation and training.

"Facilities in connection with courts to determine mental condition of prisoners before sentence.

"Establishment of more ungraded classes in public schools to provide training adapted to the capacity of backward and defective children.

"A system of community supervision for the feeble-minded who can safely be left in the community after being properly trained."

In the Public Health Report for May 17, 1918, an interesting article on this subject has been published, dealing with the personality of feeble-minded children in the general population. Children who grade below normal intelligence in psychological tests should be more carefully studied. Binet and Simon claim that a feeble-minded child does not resemble a normal child whose mental development is simply retarded; the mental equipment of the former lacks equilibrium and balance. Five types are discussed to illustrate the plan for psychiatric study and the tentative classification of feeble-minded children: (a) those who show "shut-in" tendencies, (b) those with manic-depressive-like reactions, (c) those allied with the manic-depressive group, (d) those who show the egoistic and epileptic temperament, and (e) those who show a fatuous temperament. Constitutional traits must be taken into account when making a diagnosis of mental deficiency and a knowledge of psychiatry is an important requisite. These types should be segregated early in life in certain types of institutions, regardless of the financial status of the family, so that early training may prevent the development of the vicious tendencies which a feeble-minded child easily adopts, and which, when once developed, are not readily overcome.

TO AND FROM THE ANNUAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION AT NEW ORLEANS, APRIL 26-30, 1920.

THE Travel Department of the American Express Company has undertaken to take charge of arrangements for transportation, both rail and boat, to the meeting of the American Medical Association at New Orleans, April 26-30, 1920, and for hotel accommodations while in that city. Those desiring to make the trip are advised to get into touch with the Travel Department, American Express Company, 43 Franklin Street, Boston, or with the nearest agent of the American Express Company, for full information.

WALTER L. BURRAGE,
Secretary, The Massachusetts Medical Society.
March 4, 1920.

PHARMACOPOEIAL CONVENTION, MAY 11, 1920.

The Tenth Decennial Pharmacoepial Convention of the United States is to be held on May 11, 1920, at the Willard Hotel, Washington, D. C., at 10 A.M. All incorporated bodies and other institutions entitled to membership in this Convention are entitled to apply at once to Dr. Noble P. Barnes, Arlington Hotel, Washington, D. C., for the necessary blanks for membership in the Convention.

Prior to the meeting of the Convention, the Committee on Credentials will meet in Washington to consider all applications which are made. It is important, therefore, that all applications for membership should be in the hands of Dr. Barnes at least six weeks before the date of the meeting. It will be difficult to consider properly credentials which are delayed beyond that date and especially those which may be presented at the time of the meeting.

PENNSYLVANIA DEPARTMENT OF LABOR AND INDUSTRY.

Tenth Conference of Industrial Physicians and Surgeons, State Capitol, Harrisburg, Thursday, March 25, 1920.

Morning Session: 9.30 A.M.

Chairman: Dr. Francis D. Patterson, Chief, Division of Industrial Hygiene and Engineering, Pennsylvania Department of Labor and Industry.

Address of Welcome. Hon. Clifford B. Connelley, Commissioner, Pennsylvania Department of Labor and Industry.

1. The Rehabilitation of the Industrial Cripple. Dr. Harry E. Mock, President, American Association of Industrial Physicians and Surgeons, Chicago, Ill.
2. The Problem of the Malingerer. Dr. Judson C. Fisher, New York City.
3. Heart Disease in Relation to Industrial Efficiency. Dr. William E. Robertson, Philadelphia, Pa.
4. The Physically Substandard Worker. Dr. Irving Clark, The Norton Company, Worcester, Mass.

Afternoon Session: 2.00 P.M.

1. Influenza. Dr. Alfred Stengel, Professor of Medicine, University of Pennsylvania, Philadelphia, Pa.
2. Health Education in Industry. Dr. C. E. Ford, General Chemical Company, New York City.
3. Plant Dispensaries and Their Equipment. Dr. C. D. Selby, Toledo, Ohio.
4. Occupational Diseases and Their Compensation. Dr. Frederick Hoffman, Third Vice-President and Statistician, Prudential Insurance Company of America, Newark, N. J.

SOCIETY NOTICES.

American Medical Editors' Association.—The fifty-first annual meeting of the American Medical Editors' Association will be held at the Grunewald Hotel, New Orleans, La., on Monday and Tuesday, April 26 and 27 (during the week of the A. M. A. convention), under the presidency of Dr. Seale Harris, Editor of the *Southern Medical Journal*.

A most interesting program has been arranged, and every doctor even remotely interested in medical journalism will find it to his advantage to attend.

It is advisable for you to make early reservation of rooms to assure yourself of accommodations.

Harvard Medical Society.—A meeting will be held in the Peter Bent Brigham Hospital amphitheatre (Van Dyke Street entrance), Tuesday evening, March 2, at 8.15 o'clock.

PROGRAM

1. Dr. W. R. Sisson: The Effects of Feeding the Thymus Gland.
2. Dr. W. T. Bovie: Electrons and the Structure of Protoplasm.

Medical students and physicians are cordially invited to attend.

Elliott C. Cutler, *Secretary*.

New England Pediatric Society.—The sixty-second meeting of the New England Pediatric Society will be held at the Boston Medical Library on Friday, March 12, 1920, at 8.15 P.M.

The following papers will be read:

1. Diabetes in Childhood. Elliott P. Joslin, M.D.
   Discussion opened by F. G. Brigham, M.D., and Horace Gray, M.D.
2. Medical Supervision of the Boarded-out Child, Maynard Ladd, M.D.
3. Are the Amounts of the Individual Mineral Elements Usually Fed in Modified Milk Formulas Sufficient?. Alfred W. Bosworth and Henry I. Bowditch, M.D.
   Discussion opened by W. R. Sisson, M.D.

Fritz B. Talbot, M.D., *President*,
Lewis Webb Hill, M.D., *Secretary*.

NOTICE.

United States Civil Service Commission.

The United States Civil Service Commission announces that a large number of physicians are needed for employment in the Indian Service, the Public Health Service, the Coast and Geodetic Survey, and the Panama Canal Service. Both men and women will be admitted to examinations, but appointing officers have the legal right to specify the sex desired when requesting the certification of eligibles.

Entrance salaries as high as $200 a month are offered, with prospect of promotion in some branches to $250, $300, and higher rates for special positions.

Further information and application blanks may be obtained from the Secretary of the U. S. Civil Service Board at Boston, New York, Philadelphia, Atlanta, Cincinnati, Chicago, St. Paul, St. Louis, New Orleans, Seattle or San Francisco, or from the U. S. Civil Service Commission at Washington, D. C.

RECENT DEATHS.

Dr. Edward D. Hall died on February 19 at Meriden, Connecticut, at the age of 69 years. Dr. Hall was born on April 1, 1851, at Raynham. He studied medicine at the Harvard Medical School, and also in Berlin and Paris. He practiced in Massachusetts until 1891, and in Meriden for 29 years. Dr. Hall was chief examining physician in Connecticut for the Royal Arcanum. He is survived by his wife and two step-children.

Dr. Joseph P. Murphy died of bronchial pneumonia on February 18, at the Peter Bent Brigham Hospital at the age of 58 years. Dr. Murphy was born in Boston, the son of James and Catherine Murphy. He graduated from the Harvard Medical School in 1888 and began practicing in Brookline and Roxbury. He later studied law and graduated from the Boston University Law School, but his practice in the profession was limited to matters of medical jurisprudence. In 1911 Dr. Murphy was appointed assistant chief of the division of child hygiene of the Boston Board of Health. He was a member of the Norfolk County Medical Society and the Massachusetts Medical Society. Dr. Murphy is survived by one brother and one sister.

Dr. Harry J. Tate, of Pittsfield, Massachusetts, died at the House of Mercy on February 11, 1920, at the age of 30 years, of pneumonia, due to overwork and exposure during the influenza epidemic. Dr. Tate graduated from the Georgetown Medical School in 1914. He served for one year as house physician at St. Francis' Hospital, New Jersey, and from 1915 to 1917 he held a similar position at the House of Mercy in Pittsfield. After his return from war service in France he was elected a member of the medical staff of the House of Mercy. On January 5 he was elected city physician. Dr. Tate was a member of the Massachusetts Medical Society and of the Berkshire District Medical Society. He is survived by his mother and by one sister and one brother.

Dr. Gardiner M. Kingman died recently at his home in West Somerville. He was born in Norton, and had practised dentistry in Boston and Somerville for more than 50 years. He is survived by one son and one daughter.

The Boston Medical and Surgical Journal

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Original Articles.

MALIGNANCY AND RADIATION. A STUDY OF THE RELATION OF THE STRUCTURE OF CANCER TISSUE TO RADIATION.*

BY FREDERICK BRYANT, M.D., WORCESTER, MASS.

THE study of malignancy and radiation is attended with extreme difficulties because neither subject is, as yet, completely understood. No man knows the cause of the former or the exactly accurate method of applying the latter. It is the purpose of this paper to present what has been learned about these baffling and mysterious subjects and tabulate what has been observed of the action of the roentgen ray and radium on malignant tissue.

Among the discoveries which made the 19th century forever famous, was the demonstration of uni-cellular existence and the fact that animal and plant life were made up of an aggregation of cells which resembled, with astonishing similarity, the uni-cellular amoeba. Thus the establishment of the fact that the ultimate subdivision or unit of life is a cell. This discovery shed a wonderful light upon scientific study; for if the essentials of life of the amoeba could be learned it would furnish a sure guide to the interpretation of all higher forms of life.

This cell was found to consist of a protoplastic body and a darker round center called the nucleus. While at first great significance was attached to the former it finally appeared that the latter was the essentially important part of the life of the cell. It was found to be the heart or brain of the cell; that deprived of it the cell soon suffered death; that in it was centered the all important function of reproduction; that the nucleus alone was handed down to the next generation.

Experiments demonstrated the striking similarity between these uni-cellular forms of life and the individual cells of more highly developed animal life, not alone in appearance (microscopically), but when tested with various agents. For instance, when the amoeba was observed floating, under the microscope, the addition of various amounts of dilute chloroform would influence its activities and life much the same as it influences the human organism. Recently the amoeba has been tested with a variety of electric currents and the results obtained seem to apply, with striking exactness, to the individual cell, or the malignant cell of higher forms of life. Slight currents caused the amoeba to cease moving for a period, while the daily divisions of the reproductive nucleus were checked or inhibited. A stronger current proportionately prolonged the dormant period, and if the current reached a certain degree of intensity, the amoeba never awakened and death ensued. These death changes of the cell take place in the nucleus—the heart—the brain—the vital center. When we come to consider the influence of radiation upon the cancer cell this parallel will strikingly appear.

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* Read before the Worcester District Medical Society, Sept. 10, 1919.

Do we know anything about cancer? Has the past fifteen years of experimentation and study, assisted with abundant means and material, disclosed anything of value? The answer is decidedly in the affirmative. Many facts have been learned which add materially to its care and treatment and tend to place it in the list of somewhat preventable diseases.

We know that cancer has afflicted humanity from the earliest times. It is not a product of modern civilization although its increase has kept pace with it.

We know that cancer is neither hereditary, infectious, nor communicable. This fact is not only of value in obtaining insurance, but it renders the cancer victim less an object of danger. When it is known that his malady is harmless, he is better nursed and cared for.

We know that cancer is, at first, a local, or at least, a regional disease. This is valuable information for it assures us that if the cancer is thoroughly removed surgically in this incipient stage, a cure can reasonably be expected. This is the text of the sermon which the American Society for the Control of Cancer is endeavoring to preach all over our land; to influence people to seek aid very early while relief is possible; to dispel from their minds the fatalistic delusion of certain doom; to persuade physicians to act as promptly as in appendiceal inflammation; to impress physicians and patient alike that it is *delay* that kills.

We believe that cancer is caused by a chronic stimulative irritation, constant or intermittent, traumatic or chemical, perceptible or imperceptible, acting on a normal body cell. Mallory, in referring to this belief, states: "The exact manner in which the cancer arises has not been fully determined, but it seems to be due, not to direct stimulation of the epithelium, but to injury done the connective tissue and the blood vessels, as a result of which, excessive regenerative efforts on the part of the epithelium are called forth."[5] The importance of this belief will be at once apparent, not only as an incentive and a clue to the detection of more and more of these causative irritations, but as a prophylactic measure; for with the intelligent removal of the sources of these irritations, the cancer will be prevented from developing. In this preventative work the dentist as well as the physician, must act an important part.*

We know that the period of greatest susceptibility or the so-called cancer zone is from forty-five on. This is the age of hypernutrition and lessened bodily activity, especially among the more civilized people. This gives the suggestion that there may be something wrong with our modern ways of living, which ministers to the ravages of this baneful disease.†

We know that in each anatomical locality cancer differs in rapidity of growth and in its tendency to metastasis; that each such locality has its own natural cancer history; that in each instance it must be considered almost as a separate and distinct disease; that the mode of treatment must differ; and that widely different results from treatment must be expected.

We know, as has been noted, that every higher organism begins from a single cell; that this cell proliferates by division, and produces three layers designated epiblast, mesoblast, and hypoblast; that these in turn, multiply and differentiate into types of cells fitting their future functions; that each variety possesses more or less definite characteristics; that there are, in all, fifteen distinct varieties of cells giving rise to tumors which grow at various rates of speed.[5] In whatever variety of tissue the causative irritation exerts its influence, from this source, and from this type, the evil cells multiply.

So much for our knowledge of malignancy. Now what observations have been made of the action of radiation on cancer tissue? In attempting to answer this question the writer will combine, in a composite way, his own limited observations with those of the leading American, English, and French radiopathologists, illustrating the same with four sections of an epithelioma of the cervix uteri in which the

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* "Cancer of the Mouth," Boston Medical and Surgical Journal, Oct. 9, 1919.

† "The Cancer Problem," Boston Medical and Surgical Journal, Sept. 22, 2919.

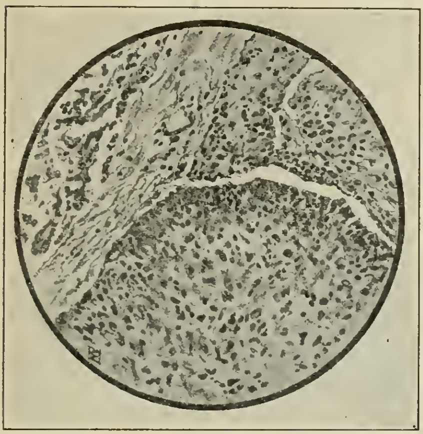

Fig. 1.

retrogressive processes are followed by a series of successive biopsies.

Figure 1* represents "metatypical pavement epithelioma" before undergoing radiation.

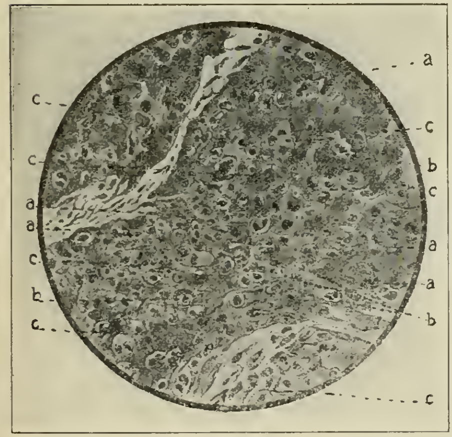

Fig. 2.

Figure 2 represents a fragment of this same epithelioma removed ten days after the first application of radium. Some of the cells have not yet undergone any transformation, others appear to have been practically destroyed by the rays, and already exhibit signs of necrosis. While it will be noted that the entire cell is hypertrophied the chief disaster is sustained by the nucleus, as in the experiments on the amoeba. Some of these nuclei are enormous, irregular, budding, hyperchromatic, and some hypochromatic. An atypical mitosis is noted at times, when a greatly hypertrophied protoplasm will seem studded with rapidly dividing nuclei. It is an abnormal development which shortens the life of the cell. This observation the writer has termed an abortion of the cell.

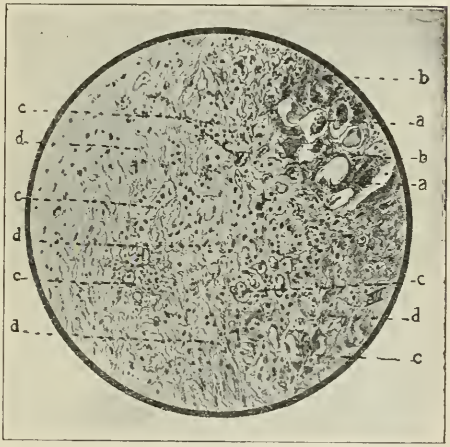

Fig. 3.

Figure 3 represents the same epithelioma from a biopsy made on the twenty-ninth day. In the upper right hand corner may be noted chromatic substance of the nucleus dispersed into the cytoplasm. Note also a group of hypertrophied cells at a very advanced stage of necrosis. They are in a stage of karyolysis and cytolysis, and are surrounded and infiltrated by numerous young and polynuclear cells which after breaking up and disintegrating them will accomplish their phagocytic function. The median zone shows the process of disintegration at the stage nearest to cicatrization. There is a substantial reticulum rich in elements originating from the hyperplastic and rejuvenated stroma of the tumor, cells of the lympho-connective tissue type, young fibroblasts and plasma cells, the evolution and organization of which will gradually result in definite cicatrization.

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* Figs. 1 to 4 are reproductions of the work of Degrais and Bellot of the Biological Radium Laboratory of Paris and the descriptions are largely reproduced from their writings.

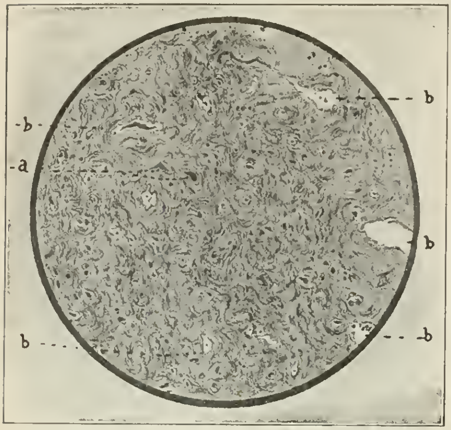

Fig. 4.

Figure 4 represents a biopsy made at the site of the cervical cicatrix three months after the first application of radium. The hypoplastic stroma seen in the previous section has given way to fairly dense connective tisue, rich in cellular elements. A few stellate connective tissue cells and some capillaries of recent formation are found in the midst of the new benign tissue but no trace of the former malignant cells can be found. In other words, the rapidly growing malignant epithelioma has, under the influence of radiation, completely retrogressed into dense connective tissue.[10]

This stimulation of connective tissue formation, it has been claimed, presses out or shuts off the cancer cells by constricting bands. This position can hardly be maintained; for the first changes are noted, as in the amoeba, in the cell itself or more accurately in the nucleus of the cell. The connective tissue appears later. The writer holds the view that radiation acts upon the newly forming cells which are of an embryonic type and therefore weaklings, less hardy than normal cells; that at the same time it exerts a destructive influence upon the fresh sources of blood supply which partake of the same immature nature; that while connective tissue proliferation is undoubtedly stimulated to some extent, its chief advent is in response to nature's call for repair processes to replace the destroyed cells.

Such, in a general way, is the accepted view of the action of radiation on morbid tissue, provided the malignant mass is rich in cellular elements and rapidly procreating; that the source of radiation can be brought into adequate contact; and that its intensity is wisely regulated. Unfortunately, this is not the whole story, for many perils and misgivings beset the path of the radiotherapist in his attempt to bring about the utter destruction of the malignant lesion.

"It is one thing to know that radiations have a differential effect on cancer tissue, and an entirely different thing to turn it to account successfully."[4] We have noted that radiation quickly inhibits the propagating power of the evil cell and if the degree of intensity be sufficient, destruction of the cell follows, but if insufficient the cell may remain inactive for a period of varying duration and revive to activity. Again, if the radiation is over sufficient the surrounding normal tissue may be broken down and nature's repair and resistant properties retarded or destroyed.

"It has become more and more apparent that successful use of radium in cancer requires careful consideration of each particular type of the disease in each organ as separate problems, in which different methods must be devised and different results expected."[4] It is well recognized that some tumors require much more radiation to accomplish their destruction than others. In the obstinate class may be named the chondromas and the various osteogenic growths. It is known also that sarcomatous growths are more quickly and readily affected than carcinomatous. The basal celled epitheliomas of the skin are, of all growths, most easily acted upon. The fact that they do not form metastases renders it possible to reach quickly and completely the ultimate limits of the disease. The squamous celled variety is much less vulnerable. There appears to be a similar relationship in the forms of carcinoma of the cervix.

"Certain epidermoid carcinomas of the cervix are composed of small cells consisting chiefly of nuclei, with scanty cystoplasm, and growing in plexiform cords. These correspond to the slow-growing and non-metastasizing basal celled cancers of the skin and are wonderfully susceptible to radiation. The other variety resembles more closely the squamous celled type and tends much more rapidly to infiltrate and is less susceptible to radiative treatment."[7] The same rule applies to carcinoma of the vagina and in fact is capable of pretty general application.

Cancer of the rectum may be classified as adenocarcinoma of the rectal mucosa, and the epidermoid carcinoma of the anal region. The former show a greater susceptibility to radiotherapy. The inguinal lymphatics are the most usual route of extension. With the exception of the tongue, this is the most unsatisfactory region for results.

Epidermoid carcinoma of the tongue is most hopeless to treat, both from mechanical difficulties and the fact that rich metastatic opportunities give it easy transit to the lymphatics of the neck. While this variety of cancer is very malignant and one of the most obstinate to retrogress, yet it can be destroyed with from one-quarter to one-half the amount of radiative intensity required fully to prostrate normal squamous epithelial cells. But in the case of the tongue the difficulty comes in applying the radium to point contact and controlling the rapid extension.

Nor are these variations of type and locality the only handicaps. The condition of the tissue surrounding the malignant area must be taken into serious consideration. It must be able to react with an exudation of leucocytes and to produce healthy granulation tissue. This is influenced by age, vitality, habits, and concurrent diseases. The tubercular and syphilitic are not favorable subjects for radiation. Every factor which reduces bodily vigor or resistance speeds on the invasion.

The age of the growth is another important consideration, for the older it is the less likely it is to submit to treatment, for the cancer cells have long since ceased to execute the reproductive process. In the radiation of these aged and self-limiting lesions there is grave danger of breaking down nature's feeble yet sufficient resistance and thereby give aid rather than battle to the old but comparatively harmless lesion.

An infection of the tumor tissue, under treatment, is a complication much to be dreaded. This process has the disastrous tendency of extending rapidly along the ramifications of the cancer path. The foul stench of septic discharge of necrotic tissue and the symptoms of intense and prostrating bacterial intoxication may entirely change the clinical picture.[7] This condition is made worse by continued radiation.

With these facts concerning the nature of cancer and its treatment by radiation before us, what deductions can reasonably be drawn for the guidance of the surgeon that he may know wherein its advantages attain, that he may add it to his kit as one more instrument of value?

It has been shown that radiation, acting upon the nucleus, inhibits the reproductive function of the malignant cell. Therefore, in operable cases, its use is advised just prior to the operation to render the tumor less malignant. This radiation should include all possible lines of metastasis to catch any glands already invaded and on beyond to reach the innocent lymphatics that they may become sclerosed and thereby rendered obstructive to any further invasion. This is a very necessary safeguard as no one can positively foretell in a given case, in just which direction extension will occur. It is also eminently necessary, for it is an admitted fact, that this extension is always well beyond the area where it can be seen or felt.

After the malignant mass has been thoroughly removed, the radiations are again advised, at stated intervals, to accomplish the destruction of any scattering cancer cells which may have been left. "Surgical treatment of malignant tumors is never complete unless it it is combined with radiotherapy to destroy the small islands of cancer tissue which may have been left behind."[9] It has been learned that if one evil cell is left unremoved it will continue to multiply as did the original tumor cell till another tumor mass is produced. Such a failure hastens rather than delays the malignant process, for a local has been converted into a general disaster. We believe that this procedure, in operable cases, will result in lessoning the number of recurrences, and greatly add to the permanence of surgical work.

For inoperable cases, the radiations are advised to prolong life, lessen pain, to check hemorrhage and nauseous discharges. In a small percentage (seven) it has reclaimed the case to operability or permanent relief. It will be noted that this method does not advocate one less operation. It seeks to aid and not to displace surgery.

Thus far we have made no distinction between the similar forms of radiation. The writer firmly believes in combining both agencies in a routine way and would not feel justified in attempting to treat malignancy if he could not avail himself of both forms, for each has its own appropriate application. It is a sound policy, in the present state of our knowledge, to combine the two agents whenever possible."[1] "Mastery of all forms of radiation is the first essential in the treatment of the various forms of malignancy. Each form has its place and has a decided advantage in its place."[8] Tumors which have not been influenced by one form have been removed by the other. Radium is admirably fitted and is far superior for treating the cavities of the body or when used in a needle form or in glass emanation tubes of actually piercing, at regular intervals, the mass itself so that a powerful concentrated action of the rays is obtained. Radium possesses the ability of producing a greater degree of reaction without injuring permanently the surrounding tissues. The roentgen ray is more adapted to the covering of large surface areas, including the mass or the scar of the wound, the metastases and the lymphatic distributions.

The most important factor in treating cancer, in any locality, is the control of the extensions. While radium acts with powerful local effect from a purely point contact, and while it is the more penetrating of the two, it is not suited to the more vital requirement of checking the general progress of the growth. "For this reason deep roentgen therapy applied externally and added to the radium internally gives a great advantage."[11] The roentgen ray should not be discredited for its failure to control malignant processes in the past, for there has been a decided advance in its therapeutic technic. With the powerful modern transformers and the Coolidge tube, much more penetrating, massive, and accurately measured doses can be obtained. "The roentgen ray has been found to be the only agent which is capable of checking and permanently curing well established malignant growths in which extensive involvement has taken place."[8] Metastases of recent growth can be destroyed by the roentgen ray although they may be considerable distance from the skin surface."[9] It is therefore important that before we treat the local condition a search be made for the secondary deposits."[1] We believe that the most trustworthy agent for this critical accomplishment is the deep roentgen ray. The operator must repeatedly treat extensive areas unmindful of the longevity of his tube or his transformer. Radiotherapists are bending every energy to the perfection of the technic of these two radiative remedies, confident that the future will reveal better things.

We have discussed what is known about cancer and its ways. We have indicated the action of radiation upon the various cells. We have also expressed our conviction in the wisely selected combination of these radiative agencies as the handmaid of surgery. Let us all therefore hopefully coöperate and combine all we know, all that has been learned, all the remedies that have any potentiality; teaching the people these things that they may know the truth about the cancer evil; that they may suspect its early whispering symptoms; that they may have full confidence in us and quickly trust themselves to our care; that this dread disease, the most deadly enemy of our art, may be placed where it belongs among the somewhat preventable and somewhat curable diseases; that it may not always prevail so completely and disastrously against us.

In conclusion, it is encouraging to note that, as a result of these teachings, already people afflicted with cancer are presenting themselves earlier than heretofore to our large clinics. One need only to have attended the last annual meeting of The American Medical Association or note the medical literature for the past year and a half to realize that a wave of radiation popularity is sweeping over the American medical profession. More and more physicians and surgeons are advising its use both before and after operations and as a palliative measure. Radiations, of one or the other variety, solve many knotty problems, in a restricted way, in well selected cases, in almost every department of our art.* Better and better results, as technic improves, are reaching us from all over the world. Recently, Janeway, in a most studied and monumental discussion of the use of radium in cancer of the cervix, concludes that in this vicinity these radiations destroy the diseased tissue to a greater distance than the knife is capable of removing it. "Every effort should therefore be made to secure its general use throughout the country."

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* "Radiotherapy," BOSTON MEDICAL AND SURGICAL JOURNAL, Aug. 28, 1919.

REFERENCES.

[1] Knox: "Radio-Therapeutics," Vol. ii, London, 1918.
[2] Burnham: "A Brief Outline of the Status of Radium Therapeutics," Johns Hopkins Hosp. Bull., May, 1915.
[3] Snyder: "The Radical Cure of Cancer by Radium."
[4] Janeway: "Radium Therapy in Cancer."
[5] Mallory: "Principles of Pathological Histology."
[6] Schmitz: "The Action of Radium on Cancer of the Pelvic Organs."
[7] Ewing: "Some Factors Influencing Results of Radium Therapy."
[8] Bogg: "The Local Application of Radium Supplemented by Roentgen Therapy."
[9] Lavin: "Relation between the Surgical Treatment and Radiotherapy of Cancer."
[10] Degrais and Bellot: "Cancer of the Uterus and Radium."
[11] Pfahler: "Radium Combined with Electrocoagulation Surgery and Deep Roentgen Ray in the Treatment of Malignant Disease."

DISCUSSION.

Dr. Edward Reynolds, Boston: In my judgment, the progress of radiology has been delayed many years and its credit severely injured in the opinion of the profession by the extravagant claims which have been made for it by some of its advocates. During a somewhat extended participation in cancer meetings over pretty much the entire United States I have almost uniformly found myself devoting the time which I could give to the consideration of radiology largely to attempts at refutation at what seemed to me unwarranted claims on its behalf. It is, I can assure you, a great pleasure to come to Worcester and to find myself at last in the position of having listened to an exposition of radiation by two gentlemen with whose views I, on the whole, find myself in quite complete accord.

The surgical opinion of the country divides cancer (and I wish throughout what I have to say to use the popular term cancer as an abbreviated form for—"The malignant diseases in their various manifestations") into two classes in its relation to radiation; first, certain superficial manifestations, mainly semi-malignant or slowly malignant diseases of the skin, in which the choice between radiation and the knife as a primary resort should be determined by the situation of the growth or ulceration and the amount of deformity which would result from operation. Where the situation permits wide and free excision of the growth by the knife without resultant deformity, operation is usually to be preferred; but in growths about the nose and eyes and eyelids, such as Drs. Bryant and Fields have exhibited on the screen here, radiation is often to be preferred; because of the lesser deformity which attends its use, and because in this superficial and slowly extending growths it has a high percentage of radical relief, we may even say cure, although that is a word which, like these two radiologists, I dislike to use in this connection.

The second class, from the standpoint of the use of radiation, embraces all the other situations in which malignant disease appears. In this wider field, as they have said, radiation should never be chosen as a primary resort or in the hope of permanent relief; but in speaking of this section I again find myself in most active accord with these two gentlemen to the effect that our duty towards denying that radium or radiology in any form is a cure for cancer, should not lead us to fail, as has been so often the case, in emphasizing the fact that it is perhaps the best of all our weapons for palliation, and the relief of suffering in hopeless and inoperable cases; nor, what is, perhaps, the probability that its use after operation in early cases will prove to decrease the percentage of recurrence. The most recent procedure in radiology, brief use of radiation in heavy dosage as a preliminary to operation, we must, I think, regard as still *sub judice*. Its use is founded on theory and has not yet been submitted to the test of time.

It is, I must repeat, important that we should in every discussion insist upon the often surprisingly great relief which radium offers to the sufferer from recurrent or otherwise inoperable cancer. In regions other than the external surface it is not always efficient even in palliation, but there are many cases in which it yields to those unfortunate individuals not only a great decrease of suffering, but sometimes prolongation of life in comparative, and occasionally surprisingly great comfort in exchange for a brief period of misery without it; moreover, with the return of comparative comfort the sufferer obtains a degree of hope and cheer which is of inestimable value, even though he may know at bottom that a final recovery is not to be hoped for. To insist upon the value of radiation as a palliative is really quite as important as our other duty to reiterate that it has so far proved a failure in affording radical relief except in the milder forms of cancer of the external surface.

To revert to the subject which is more especially mine we must certainly admit that after all the time, effort and money which have been spent in cancer research, our exact scientific knowledge of the nature of the disease is still incomplete, but all this work has not been wasted. We have certainly made very great advances in our knowledge of the natural history of the disease and in our power of controlling it.

In the first place, we have established certain negatives which are of the utmost importance. Cancer is not a bacterial disease, it is not the result of a parasite, it is not contagious nor communicable.

It is not hereditary. It is barely possible that there may occasionally be certain strains of descent in the human race which have less resistance to the disease than the average, but even this is not proved and perhaps not probable; in fact, the whole weight of evidence is that it is in no sense heritable. Of those who attain the age of forty, one in eleven individuals dies of cancer; one woman in every eight; one man in every fourteen. Under these conditions, it is evident that there will be many families which will have had repeated instances of the disease that do not need an invocation to heredity to explain their association in one line of descent. On the average every individual who can remember eleven adult relatives will have had one case of cancer in his family.

So much for the negative. Now for the positive facts which we have recently learned. We know now that the process known as cancer consists essentially in an undue activity, an accelerated and altered growth, of the tissue cells of any spot in the body. We know that this undue activity and acceleration of growth is usually the result of the application of a long continued chronic irritation to this spot. We cannot help suspecting that cancer is always the result of such a stimulation to the growth and vital activities of the cells at a given spot, but it is not yet safe for us to make such a statement. We can only say that this is usually the fact.

There are numerous instances in which continued observation and records of cases have made this fact so patent that ordinary common sense proclaims its truth. Take the instance of Kangri cancer in Thibet. The inhabitants of Thibet have a habit of life which exists nowhere else in the world. It is their habit to wear inside their outer clothing and against the surface of the abdomen a contrivance known as the Kangri basket, which is in effect a small stove which is intended to keep the individual warm in their severe climate and which incidentally applies continuously a somewhat intense localized heat to the abdominal skin. This habit is peculiar to Thibet, and in Thibet squamous celled cancer of the skin of the abdomen at the point where the Kangri basket rests is an extremely common affection. It is unknown anywhere else in the world.

In certain localities in the East, cancer of the oesophagus, which is exceedingly rare over the rest of the world, is extremely prevalent among men, and is one of their common diseases; but it is extremely rare, and is indeed almost unknown, among women. In these localities the staple diet of the population consists of boiled rice eaten either alone or with other food. Both sexes ordinarily eat boiled rice three times a day. The men eat it scalding hot, so hot that no untrained gullet can endure it; the men are afflicted very commonly with cancer of the oesophagus. The women, who eat at a second table, *i.e.*, who eat the rice which the men leave and consequently eat it cool, are free from the disease.

One of the most common of all cancers over almost the entire world is cancer of the female breast, and of this the most common form is an adeno-carcinoma of the milk ducts. We now know that this is ordinarily preceded by cystic dilatation of a duct, or ducts, usually by inspissated secretion (there is of course a constant small and unnoticeable secretion from these glands throughout life). Of course the distention of such a duct, the necessity for constant absorption of fluid to prevent increase of distention, and the presence in contact with its mucous membrane of the concentrated, inspissated residue furnishes a long continued chemical irritation or stimulation of the cells of this mucous membrane. This furnishes a bio-chemical or physiological, long-continued stimulation of the breast cells, precisely as the heat of the Kangri basket offers a physical stimulation to the cells of the abdominal skin. .

Not to multiply instances we may revert to the all important point which underlies our whole present view of cancer,—that we believe that the development of malignant tissue is, at least usually, the product of a long-continued stimulation of the tissue cells at that point.

Perhaps the most common, certainly among the most common, of these so-called pre-cancerous conditions are the mechanical and perhaps bio-chemical stimulations which result from the presence of benign new growths or ulcerations. Most of the benign new growths, and most long continued chronic ulcerations, may at times result in the production of malignant tissue within or about them; and the percentage of such growths or ulcerations which result in malignancy varies both with the varying anatomical character of the mass or ulcer, and, more especially, with the situation in the human body which they occupy. This brings us to a second very important principle. The natural history of cancer varies essentially not only with the varying histological characteristics of the individual neoplasm but quite as much in accordance with the situation in which that neoplasm appears.

We must regard cancers of each of the many organs of the body as being clinically almost different diseases, *i.e.*, the natural history of the disease, the degree of its malignancy, the rapidity of its progress, its method of extension, the time at which this extension occurs, and consequently its prognosis, its suceptibility to treatment at any given stage of its growth; in other words, its curability varies perhaps more with its site than with any other single factor in the situation. We must learn the diagnosis, natural history, and methods of treatment separately and individually for cancer of each organ and situation in the body.

Now, then, to the practical results of all this, to a consideration of our capacity for affording relief.

We must admit at the outset that in established cancer in any situation the prospect of permanent cure is very poor and is confined to the earliest stages. After metastasis has once occurred the most radical operation seldom yields more than at best a period of relief before recurrence occurs. When the disease is detected before actual metastasis a thorough radical operation such as would be performed on an advanced case does yield in many situations a reasonable percentage of radical and permanent cure. This application of extensive radical operation to the earliest stages is the chief advance which has been made in the treatment of established malignant disease.

On the other hand, we have made a great advance by recognition of the fact that the application of operative or other treatments, often of a trifling nature, to the benign conditions, mainly neoplasms or ulcerations, which we now group as pre-cancerous, offers an assured prevention of the development of this disastrous disease.

This is an enormous practical advance in the management of the disease and with it the duty of a practitioner towards his patients has been radically changed. He must recognize now and for the future that the classical diagnosis of cancer is, in fact, merely the diagnosis of the established and too usually incurable stage. He is not now justified in waiting for the appearance of the symptoms and signs on which this diagnosis is founded, but must familiarize himself with the symptoms and signs of the pre-cancerous stage in each of the many localities in which malignant disease occurs; and, unless he is himself a surgeon, should send every such case to a competent surgeon as soon as it is seen and without delay. It is true that only a percentage of these benign conditions develop cancer and that not all of them need be operated upon at once, but there are many cases which an extremely brief delay will put into the class of established cancer, and therefore the responsibility for delay is very heavy and is one which should be taken only by the most competent authority available.

We recognize that the habit of submitting all benign new growths or persistent ulcerations to excision or active treatment will yield a certain number of minor operations which might have been, in the end, avoided: but we believe that the performance of a reasonable excess of trifling but finally successful excisions is justified by the resulting avoidance of a large number of extensive, mutilating, and too often merely palliative radical operations.

The time available in a brief résumé of the subject must prevent any attempt at a statement of the diagnostic signs of the pre-cancerous stage in each of the many situations in which these appear, but there are four situations in which the disease occurs so much more frequently than elsewhere as to constitute a great majority of all cases, and these four may be briefly referred to.

Cancer of the Digestive Organs, properly, cancer of the stomach, colon, and rectum, should be described separately, but it may suffice here to say that any definite loss of blood from the rectum is highly suspicious and should lead to a physical examination which, unless definite hemorrhoids are found or if the cure of these fails to relieve the hemorrhage, should include an immediate proctoscopic examination; and that bloody vomitus or persistent indigestion which resists treatment and especially if it is attended by loss of weight or change of color, should be regarded as highly suspicious of malignant disease, and should lead to an immediate examination without delay by all the methods available, including analysis of the stomach contents and feces and the use of the bismuth x-ray.

In cancer of the digestive organs the diagnosis of the pre-cancerous stage is difficult, and the operations for its relief are not trifling, though far less severe than those required by the established disease. This situation is therefore that in which the prospect of control of the disease is least good and in which we must expect a lesser decrease of mortality in the future than in any of the others; yet even here early and complete physical examination should yield a considerable decrease in the fatalities.

Cancer of the Breast is almost wholly peculiar to women. In this situation metastasis occurs very soon after the establishment of the disease, but the appearance of malignant cells is usually preceded by a long continued pre-cancerous stage. The situation of the pre-cancerous mass renders it easy of diagnosis and the operation for its removal is very trivial, hence this is perhaps of all others the situation for which we may expect the greatest decrease in the occurrence of the disease under modern treatment. Present opinion demands that all nodules in the breast which have persisted for a month should be regarded as suspicious and that unless a competent authority can show reason to the contrary they should be removed without delay. The excision of such a benign nodule puts the patient's arm in a sling for a few days, results in no deformity, and should never be followed by recurrence. The specimen should be submitted to immediate examination if possible before the conclusion of the operation and if malignant tissue is found an extensive radical operation with the excision of all the axillary and subclavial glands should be performed at the same sitting. In the breast, peculiarly, the performance of the radical operation a few days later and after submission of the specimen to a pathologist at a distance leads to a great increase in the number of recurrences even in the earliest stages of the established disease.

Cancer of the Uterus occurs in two quite distinct forms. Squamous celled cancer of the cervix extends early through the lymphatics and is an extremely active and progressive form of the disease in which radical cure is rarely effected by even the most extensive operations after malignant tissue is once present. It is, however, preceded by a very long precancerous stage of simple chronic ulceration which is susceptible of a radical cure, sometimes by minor treatment and always by a plastic operation such as trachelorrhaphy or amputation. Its leading symptom is a persistent, usually slightly offensive, leucorrhea in a woman approaching or over forty. Every such case should be treated. If the leucorrhea is tinged with blood or if bleeding follows any mechanical interference with the cervix the condition is of the utmost importance.

Cancer of the body of the uterus is of a slower type with late metastasis. Its leading symptom is increased catamenial flowing in a woman approaching or over forty; or, more suggestive still, intermenstrual bleeding; and if the intermenstrual flowing is merely serous or serosanguinous it is almost pathognomonic, no matter how small its quantity may be.

The general popular impression that increased flowing at the time of the menopause is normal, is to be expected and is unimportant, has perhaps cost more lives than any other false impression of medicine. This is in fact the period in life when flowing should invariably decrease. Increased flowing is not always or necessarily the result of malignant disease, but is never normal. It is always the result of some abnormality in the organ and it always demands prompt and thorough examination. This cannot be too strongly insisted upon.

The treatment is curettage with submission of the curettings to a pathologist, and hysterectomy at the same sitting if adenoma or adenocarcinoma is found. If the pathological examination is negative but the flowing recurs the curettage should be promptly repeated, since the actual malignant process is frequently limited to a very small spot in the uterus and may easily have been missed by the curette.

Cancer of the Skin. This form of the disease has been somewhat fully covered by the discussion already and it may suffice to say of it that any persistent crack or ulceration of the surface, especially if near one of the orifices of the body, should be regarded as potentially pre-cancerous and disposed of by minor or operative measures rather than endured. Warts, moles, or birthmarks which enlarge or change color during middle life are usually pre-cancerous and should be immediately treated by the appropriate means.

The American Society for the Control of Cancer has published a monograph on the diagnosis of the cancerous and pre-cancerous stages in all of the many situations in which they occur, which the Massachusetts Health Commissioner is about to distribute to every practitioner in the State. This pamphlet was prepared by a committee of experts, was subsequently revised with great care by the Council of the Control Society, a body composed of surgeons and pathologists from all over the country, and may be regarded as the most authoritative statement of present opinion on the subject of cancer which is now in existence. As I was not a member of the committee which produced it, I may perhaps be permitted to express my opinion that it is a most satisfactory, clear, and concise production. You will receive it shortly from the State Commissioner and I think that you should not only read it but should keep it on your desk for constant reference and guidance, as I myself shall certainly feel compelled to do. Few men, even of those of us who are especially interested, can carry in their heads every sign and symptom of all the less common varieties of this multiform disease.

CAESAREAN SECTION.

By Nathaniel W. Emerson, A.M., M.D., F.A.C.S., Boston.

Some adverse criticism having been made of an article published by me last year upon this same subject has led me to choose this topic again, hoping thereby a full discussion will be provoked. Further experience only emphasizes all the claims made in the former article, and leads to more positive claims for this operation as well as a wider range for its application. I believe it is the greatest single advance made in civil surgery within recent years. The improvement in the technique in a very short time has carried it almost to perfection, and could reliable statistics be compiled showing the actual saving of life both of mother and child, they would be astounding. To this, if we add the enormous saving of traumatic mutilation, with the subsequent dangers and discomforts of repair, the credit side of this operation is almost incomprehensible. It seems to me that the status of the operation at the present time is very similar to that of the operation for appendicitis before the latter operation was accepted by the profession. Nothing is more vivid in our mind than the constant reiteration of the indications not only of appendicitis but for the operation of the same, and the slow winning of the profession as a whole to the acceptance of the fact that the cure for appendicitis was removal of the appendix. Very few are foolish enough to question this today.

When we look back and consider what were the obstetrical teachings and practice of men contemporary with myself, and compare them with the brilliancy of the results of the Caesarean operation in competent hands, the mind can hardly attune itself to comprehend the old procedure. Think what it meant to keep in one's armamentarium the craniotome and cranioclast and what it meant to use them. The deliberate sacrificing of the child *in utero*, and the horrible, brutal means of extracting the child, seem today as if they should hark back to the very darkest of all ages, and yet within the memory of no end of men living they were the accepted procedure of the day. The use of these must mean not only the deliberate destruction of the child but almost without exception the deliberate mutilation of the mother and too often fatal results for both. As performed today Caesarean section is one of the most finished of operations. The technique is so simple and rapid and definite that it is without an element of danger in itself, adding nothing to the complications which one is facing. It is such a sure life-saver for the mother,—and if the child is viable, for the child,—and is so beneficent to the woman not only in relieving her of pain which would otherwise be long-protracted, but in otherwise preventing mutilations which are too often accompanying, that I feel sure if the profession would realize just what the operation accomplishes, it would be universally accepted under conditions which would otherwise call for some operative procedure. The safety of the operation in competent hands has been definitely demonstrated under most astounding conditions. Also it will often save a child where the loss of the mother is inevitable and where otherwise the child would be lost also.

The indications, so far as my own observations are instructive to me, are herewith somewhat formulated. A wider experience will no doubt add to these indications in ways which will be generally acceptable, but these are drawn from my own limited experience.

Contracted pelvis has always caused difficulties and often prevented normal labor. If left to nature labor is long and tremendously protracted, with the suffering incident to the mother and with more or less danger to the child from the delay in moulding the head. The alternative has been forceps, which only add to the difficulties because, of course, the forceps in themselves take up some room in coming through the pelvis. Probably some form of contraction of the pelvis is perhaps the most common cause for the application of high forceps.

Albuminuria and its sequelae, where it is definitely due to the pregnancy and where it has proceeded so that the life of both mother and child are menaced, calls for a termination of the pregnancy, and this can be done so quickly and definitely by a Caesarean that I believe it will be the accepted method of the future.

For puerperal convulsions nothing can compare with this method.

In cases of placenta praevia all other methods should be discarded. Whenever a diagnosis can be made of placenta praevia, no matter what the placement of the placenta, either lateral or central, no other method than a Caesarean should be considered for its relief. The method so long accepted of turning the child and forcibly delivering, by compression controlling the hemorrhage, is simply a last ditch resort, because heretofore we had no other means of offering any form of relief. The danger from a placenta praevia is from a hemorrhage which cannot be controlled by the methods heretofore in use. It is a mechanical condition and the only thing abnormal about it is the location of the placenta whereby it becomes obstructive and must be dislodged more or less before the child can be delivered. If the child can by any method be extracted the uterus automatically takes care of itself without reference to where the placenta may be attached. Therefore, it would seem without possibility of controversy that, in a case of placenta praevia when recognized, the removal of the child, both before the mother is exhausted and before the child is affected, would be not only the most mechanical method but would also be the most commonsense one. As an actual fact, in this operation the location of the placenta is absolutely immaterial. I have several times found it so placed that I have completely separated it from the uterus before removing the fetus and while the hemorrhage was momentarily severe, because the uterus could not contract itself. The removal of the child was immediately followed by a contraction of the uterus and the hemorrhage controlled. Therefore, in any case of placenta praevia the surest method of controlling hemorrhage is by developing conditions whereby the uterus can contract itself, and this is more quickly and safely done by opening the uterus and removing the child than by any other method devised, and probably better than by any other method which will ever be devised.

Certain cases which are classed under the heads of inertia and atony of the uterus, which to me are rather vague terms, are also better dealt with by Caesarean than by any other method.

Cases of malposition, from whatever cause, are more definitely and safely managed by this method than by any other.

Postoperative intraabdominal complications due to adhesions from some previous operation which was faulty can be dealt with successfully only by a Caesarean operation. Any operation preceding a pregnancy which fixes the uterus in the abdominal cavity, or which prevents its free, untrammeled development, establishes conditions which are fatal to the child unless saved by an abdominal section. One of the three fatal cases in this report died because of the difficulties left over from a former operation. The child was saved but the mother was unable to survive.

An experience which will be more definitely related later, leads me to add certain rare cases where the inability of the labor to proceed is inexplicable, which would be better dealt with by Caesarean than by any other method.

Cases of pregnancy complicated by a fibroid require a hysterectomy. The only chance for the child is to conduct the pregnancy beyond the viable age if possible, and then make a Caesarean to save the child, followed by a hysterectomy. The Caesarean in no way complicates the subsequent procedure.

In many of the conditions above noted the first recourse has been the high forceps operation, noted here only to condemn it. I believe the day is approaching when the high forceps, and especially the axis-traction forceps, will be thrown on the scrap heap. The high forceps is unmechanical, most destructive of the life of the child, almost invariably mutilates the mother, and is a brutal method of overcoming the difficult situation. The exhaustion of the mother cannot be ignored, nor the danger of the life as well as the mutilation of the child. It is usually a tedious performance and if it is hurried and unnecessary force used, it almost invariably means greater laceration for the mother.

With a Caesarean section in view, a certain few precautions should be rigidly undertaken. First, no unnecessary vaginal examinations should be made and when made they should be under the most rigid aseptic conditions. Before the operation the vagina should be thoroughly asepticized.

Also, particular attention should be given when the operation is undertaken, before labor has begun, to see that there is some dilatation of the cervix. Then, of course, every aseptic precaution should be taken as in every abdominal section.

Probably the greatest danger lies in sepsis, and this danger is greater because there are so many ways it can enter a case through negligence of others than the operator. In every case in my own experience sepsis looms up greater to me than any one factor of danger. One of the fatal cases in this report was due to sepsis, the cause of which I do not know as I was not associated with the case. The danger from sepsis cannot be too strongly emphasized. In every case some sort of examination must be made, of course, to determine the nature of the case, and if possible what is complicating it. There is no reason, however, in repeated futile vaginal examinations which do not immediately result in definite conclusions. One should accustom himself to learn by one single examination all that a case requires for its final determination. This examination should be made under complete asepsis, as indeed should every examination under such circumstances, even if delivery is to be left to nature. Repeated examinations which result in no definite action are signs of incompetency. If an operation is decided upon the vagina should be most thoroughly cleansed and as carefully made aseptic as if a hysterectomy were in contemplation. If a Caesarean is decided upon the same rigid precautions should be undertaken as in any other case where the abdomen is to be opened. I am wholly convinced that in these cases where sepsis supervenes upon the operation it is wholly due to the fault in the technique and could have been avoided.

Aside from this, it seems to me the greatest dangers are from delays of one kind or another; at least my observation leads me to this conclusion. If one hesitates under any given condition until a woman is absolutely exhausted, the danger, of course, is very acute, exactly as it is in a case of appendicitis, neglected until death threatens. In such cases as these the operation only too often fails. Therefore, when there are such difficulties that delay is causing exhaustion, nothing is to be gained by waiting one hour or twenty-four hours before facing the situation which is hourly growing more menacing.

Recently one of my associates lost a case on the table, the third of those recorded in this report, because the woman was so exhausted from hemorrhage that she could not survive the operation. The operation was undertaken only when it was seen that the woman was going to die unless something was done. This was a case of placenta praevia which should have been operated the moment the diagnosis was made. At least some interference should have been undertaken at that time and if a Caesarean was finally to be done it should have been employed at the beginning. My associate was not called into consultation until more than twenty-four hours were allowed to drift by with a constant hemorrhage accumulative in its ill effects and her condition had become desperate. This was a needless failure.

A recent case was so unusually peculiar that it is worthy of record. Asked to see a woman in her first pregnancy at full term we found a healthy woman with a competent pelvis who had been in labor thirty-six hours without engaging the head in the upper straights. Pains were regular and normal in every way so far as one could judge, coming from three to five minutes apart and as strong as one could wish, yet the head floated. It made no effort to engage itself. The woman was becoming exhausted and upon examination I could find no reason why this condition of affairs should prevail and I at once advised an operation. This was refused at first, but after a delay of several hours with no progress it was accepted. The operation found everything normal except the incomprehensible entanglement of the child with the cord. The latter wound from the umbilicus around the body to the left side behind, through the axilla, then turned upward and backward from the shoulder across the back of the neck to the opposite side where it proceeded downward and forward through the axilla and backward to the placenta. This occupied practically all o the slack of the cord and really hung the child *in utero* to the placenta in such a way that the head could not engage. The only alternative to this operation was a high forceps and if the forceps had successfully engaged the head and brought it down I cannot conceive how delivery could then have taken place unless the cord was divided or else the placenta stripped from its uterine attachment. In either case the delay in extracting the child would probably have been sufficient to cause its loss and if the placenta had been separated with the child *in utero* before it was extracted I do not see how a very severe hemorrhage could have been avoided. At any rate a Caesarean relieved the situation in a very few moments and mother and child did finely.

Another most satisfactory case was one of marked albuminuria. The patient was in competent hands and closely watched. Shortly after rising one morning she complained of headache and faulty vision, and more rapidly than I have ever observed before she lost sight and consciousness. By noontime she was helpless and her condition serious. A Caesarean at mid-afternoon interrupted all unfavorable symtoms, saved a beautiful baby, and the mother improved at once and made a fine recovery.

The time consumed in the operation is something of a factor in its success. After the initial incision everything should go on smoothly and efficiently to the end, and it will be a very rare and complicated case which cannot be completed in half an hour. The average time consumed should be not over 25 minutes.

The following summary takes the place of one published with a former article on this same subject and includes all of the cases therein listed with the addition of those which have occurred since that was published. It must be distinctly understood that these cases were not all performed by myself. They include all of the cases I have ever done together with all the cases that have been done in our hospital up to the present time by whomsoever they were operated. This should make more convincing and interesting whatever claims are made for the operation. It does not mean the summary of cases by some individual who has attained exceptional cleverness. Some of the cases were done by operators who are not especially competent abdominal operators. To our mind this means that the operation is a safe one and the technique is so simple that the man of ordinary surgical ability and training can make himself competent to undertake it. To undertake it, however, he must make himself absolutely competent in his operative technique to avoid sepsis. The danger from the occasional operator is that he does not sufficiently keep in mind all the time the danger of infection. It is only when one has had sufficient experience to know that every time the abdominal cavity is opened a possibility of infection is also offered requiring the most absolutely rigid compliance with every detail of operative technique to protect the patient. When every possible precaution has been undertaken by the most competent operators there will be then failures from infection from sources so insidious that they cannot be foreseen and therefore forestalled, nor can they be detected afterwards. I know of no widely experienced abdominal operator who has not met with his inexplicable failures. Therefore, it is most incumbent that he who operates on cases as serious as those under discussion should observe every possible precaution to avoid infection through the operation.

Summary of Cases.

Diagnosis	Operation	No. of Cases	No. of Oper.	Cured	Died	Remarks
Albuminuria	Caesarean section	6	6	6		One foetus a monstrosity
Breech presentation	" "	4	4	4		
Cicatricial contraction of cervix uteri	" "	1	1	1		
Contracted pelvis	" "	33	33	33		
Double vagina	" "	2	2	2		
Dystocia	" "	30	30	30		
Dystocia; hydramnios	" "	1	1	1		Foetus a monstrosity
Eclampsia	" "	8	8	8		
Epilepsy	" "	1	1	1		
Foetus dead	" "	4	4	4		5 m., 5½ m., 7½ m., 9 m.
Hernia, vent. p. o.	" "	1	1	1		
Metrorrhagia gravidarum	" "	1	1	1		
Mitral insufficiency; exhaustion	" "	1	1	1		
Myomata uteri	Caesarean section. hysterectomy	1	1	1		
Myomata uteri	Caesarean section. myomectomy	1	1	1		
Occipito-posterior position	Caesarean section	2	2	2		
Placenta praevia	" "	6	6	4	2	
Post-operative adhesions	" "	1	1	0	1	
Spondylitis	" "	1	1	1		
Suspension in utero of foetus by cord	" "	1	1	1		
Toxaemia	" "	3	3	3		
Transverse presentation	" "	2	2	2		
Uterine inertia	" "	9	9	9		
Total		120	120	117	3	

Total number of cases, 120; total number of deaths, 3; death rate, 2½%.

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THE NEXT STEP IN THE CAMPAIGN FOR INFANT WELFARE. THE EDUCATION OF THE WOMEN OF THE NATION FOR MOTHERHOOD.

By Isaac W. Brewer, M.D.,

Health Officer, Watertown, N. Y.

It has always seemed to me that the infant welfare campaign begins too late in the life of the child. The welfare stations receive children up to the age of two years and teach the mother how to care for the child. However, very few mothers apply to the stations until the health of the child has already been injured and it needs rebuilding. In other words, the mother is taught to care for her child at its expense. The ideal for which we should strive is an efficient course in the care of the child to be an integral part of the education of every woman. It is far more important for the nation that a woman should be proficient in the care of her child than that she should have a knowledge of many of the subjects taught in the public schools. Much as this is to be desired, it is doubtful if the necessary instruction can be added to the school course for some years to come. It therefore seems that we should as a substitute do the best we can with the material at hand. The various infant welfare stations throughout the country are short of help, and what would be more natural than that they should become teaching centers by receiving a limited number of young women as helpers, who, while helping, would gain a practical knowledge of the care of a child. This plan would be of the greatest advantage to the community, in many ways.

First of all, it would bring the welfare stations into close contact with many persons who now know but little about them and at a time when these persons are in a frame of mind when they can absorb the teachings of the station.

In the second place, it would create in those thus employed a civic responsibility, a most desirable thing at this time. But most of all, it would teach the possible mother how to care for the child which she may reasonably expect to be hers and at the same time she would be assisting some other mother with her burden.

The teaching should be systematic and besides the work at the station should include a certain amount of study or a number of lectures on the physiology of the infant and on the prevention of those diseases which are common amongst the children during the first two years of life. Toward the end of the course the responsibility of the individual should be developed by field work with the visiting nurse. The pupil should be taught to go into the home and instruct the mother in the preparation of the child's food and in other problems which will be met.

It is very apparent that such a course will greatly benefit the nation. It will create a large number of women who have had practical experience with the problems of infancy and they will be able to avoid those errors which are all too common in the average home.

Do we need this education amongst women? Hear what Dr. Charles J. Hastings, President of the American Public Health Association, had to say in 1918: "Unfortunately, the knowledge that we possess in regard to preventable diseases and the ways and means by which they can be controlled has been for the most part kept within the precincts of health departments, universities, laboratories, and so on. It has never been translated as thoroughly as it should have been into a form that the man on the street and the woman in the humblest home could understand. . . . . There is not a woman in our land who is not fond of her baby, and who would not probably jeopardize her life for that baby. Is it likely that she is going to willingly sacrifice it? No. Nine times out of ten it is the result of ignorance; it is the result of lack of proper knowledge on her part."

Possibly some of the readers will feel that conditions in their community are very satisfactory, but they are not. The infant mortality in this country is greatly in excess of what it should be. In New Zealand the infant mortality is much lower than in any city in the United States. Until we have reached her rate we cannot feel that all is well with us. In fact an infant mortality of 25 per thousand is higher than it should be in an enlightened community where proper educational and preventive measures obtain.

Book Reviews.

The Early Treatment of War Wounds. By Colonel H. M. W. Gray, C.B., C.M.G., M.B., (Aberdeen), F.R.C.S. Ed. Consultant in Special Military Surgery, late Consultant Surgeon, British Expeditionary Force, France. London: Henry Frowde, Oxford University Press; Hodder & Stoughton, Warwick Square, E.C. 1919.

A small volume of 300 pages admirably printed and bound, and illustrated by a few good pictures.

Lt.-General T. H. J. C. Goodwin, C.B., C.M.G., Director-General of the Army Medical Service, has written a "Foreword" which we quote in full:

"The experience of our military authorities in the present war has been that, for long periods, it was not possible to carry out any 'war movement.' Our armies were obliged —though not content—to hold their own against greatly superior odds.

"As regards military surgery during the first two years of the war, we were encountering unfamiliar conditions, acquiring new experiences, and dealing with wounds of a nature, and on a scale, hitherto undreamed of.

"It was perhaps inevitable that advances should at first be somewhat slow. During the last year or two affairs appear to have progressed more rapidly and satisfactorily, and great improvements have been made in many directions. The early treatment of wounds, the prevention and treatment of shock and collapse, the operative procedures in all types of injury, and many other problems, have received close attention with the result that the advance in these and many other matters has been very marked.

"Thousands of limbs and lives are now saved which, at the commencement of the war, would have been regarded as irretrievably lost.

"Our views on many questions and problems have changed, are still changing, and no doubt will become still further advanced in the future. It is very important that the present situation as regards advances in military surgery should be clearly and definitely set forward and published in concise form, in order that every surgeon throughout our various areas of war may become fully acquainted with the methods at present in vogue.

"Under the conditions of life which now obtain, the Army surgeon has not such full opportunities for study as might be desired, and this small handbook by Colonel Gray, giving the valuable experiences of himself and other workers, should prove of immense assistance."

Note the sentence, "Our views on many questions and problems have changed, are still changing, and no doubt will become still further advanced in the future"; this from a high authority is a powerful argument for a small manual rather than a large system of war surgery, at the present time.

The author, Colonel Gray, served for three and a half years as Consultant Surgeon in France. The responsibility was placed on him of ensuring "that the standard of surgical work in the Army should be as high as possible". This little book is a record of the methods adopted to maintain the highest standard. Colonel Gray has been assisted by several other men who have seen all sorts of military service.

The subject of abdominal wounds has been omitted: Colonel Gray thinks that the experience of a good abdominal surgeon in time of peace is a sufficient preparation for the work of war.

He emphasizes repeatedly the fact that even an approach to ideal conditions rarely can be attained by the army surgeon in time of action.

There are eleven chapters: Surgical Treatment of Wounded Men at Advanced Units; Work at a Casualty Clearing Station; The Treatment of Wound Shock; Considerations Regarding The Use of Different Kinds of Antiseptics and Dressings; Principles of Treatment of Gunshot Wounds at Casualty Clearing Stations; Operative Treatment of War Wounds; Wounds of the Brain and its Coverings; Penetrating Wounds of the Thorax; Injuries of the Spinal Cord; Compound Fracture of the Femur; Wounds of Joints. Particular attention is directed to the chapter on "Wounds of the Thorax."

The book is recommended to all progressive surgeons.

Pye's Surgical Handicraft: A Manual of Surgical Manipulations, Minor Surgery, and other Matters Connected With the Work of House Surgeons and Surgical Dressers. Edited and largely rewritten by W. H. Clayton-Greene, B.A., M.B., B. C. (Camb.), F.R.C.S. (Eng.). Surgeon to St. Mary's Hospital; Lecturer on Surgery in the Medical School, etc. Eighth edition: fully revised, with some additional matter and illustrations. Vel de minmis curat chirurgicus. New York, William Wood and Company. 1919.

The first edition of this manual was published in 1884. Mr. Pye then "endeavored to describe the details of surgical work from the viewpoint of house surgeons and dressers in surgical wards;" in this same preface, now thirty-five years old, he emphasizes the fact that surgery when considered etymologically, is "a skilled labour, nor will surgeons ever cease to be handicraftsmen".

The present volume contains 600 well printed and well illustrated pages. Mr. Clayton-Greene has "added much new matter and many new illustrations, and has taken advantages of the work of Sir Robert Jones in advising treatment for orthopedic cases."

The present volume is but slightly affected by "war surgery," which on the whole is not greatly to be regretted; for the lessons of war surgery are not yet plain nor can they be final until all data have been received and reviewed. The chapter on anesthesia is only fairly good; local anesthesia is given less than a page; less than half a page is devoted to transfusion of blood. But with these minor exceptions, the book is good, and is an admirable manual of the best English hospital practice.

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MATERNITY BENEFITS.

In another column is a report on Maternity Benefits to which attention is called.

Considerable discussion has taken place on this subject in the last few weeks among members of the medical profession. Active general discussions of this matter which concerns physicians intimately has unfortunately been delayed until a time when others interested in the same subject from a different angle have considered it for a long time and have reached more or less definite conclusions.

A similar delay in active discussion among physicians was observed in the matter of Industrial Accident Insurance. It is probable that the same thing will occur many times in the future when matters of social concern are brought before the Legislature, at first for discussion and later for action.

It is to the credit of physicians that they are so whole-heartedly devoted to their work that they have little time for other considerations, but that very fact weakens their influence in the consideration of matters of general social importance, even though incidentally their personal and professional interests are affected. On strictly medical matters physicians have a right to be heard as physicians. On social questions they have a right to be heard as citizens who may or may not, through their training and study, speak with special authority.

Have we a right as physicians to a special hearing on maternity benefits? As to the general social question of the advisability of such a measure we have not, unless we feel that the welfare of our patients as a whole is threatened or unless we feel that such a measure will lower the standard of our profession. The probability that it will incidentally change the status of our profession gives us no special right to a hearing.

If the Legislature feels that the Commonwealth will benefit by such legislation as is proposed and if we cannot show that definite harm will come we can oppose the legislation as citizens but not as physicians. If the Legislature is to enact maternity benefit laws it is the duty of the medical profession to see to it that those laws are the best attainable.

This subject has been under general discussion for a number of years. It has been before the Legislature for several years. A year ago a bill providing for maternity benefits passed one branch of the Legislature but was defeated for financial reasons in the Committee on Ways and Means. In his inaugural address the Governor this year recommended legislation to provide maternity benefits. The State Department of Health is in favor of the general plan. The Joint Committee on Legislation of The Massachusetts Medical Society and The Massachusetts Homeopathic Medical Society have decided to stand by the State Department of Health. The President of The Massachusetts Medical Society has favored the general plan and endorsed a specific bill in an editorial article in the Boston Medical and Surgical Journal. (Issue of January 29, 1920) It is the opinion of keen observers, though not of all, that some legislation will be enacted this year.

At this stage opposition to the entire plan has been voiced by certain medical organizations and district medical societies. The medical profession is obviously divided on the general social question. A majority perhaps is against the entire plan. It is opposed as socialistic. Can we expect our protests against it on these grounds to be given special consideration? We may protest as citizens but if we expect to be heard as physicians must we not express opinions on medical and not on social questions? Are we not in danger of repeating the experience of Industrial Accident Insurance? We protested against legislation. Poor legislation was passed. We are still trying to amend it. And meantime few would advocate a return to the old system which we tried to keep, even if that were possible. Must we not content ourselves with the exercise of our rights as citizens of opposing all legislation, and as physicians is it not our duty to try, if laws are to be passed with reference to Maternity Benefits, to make them as safe and sane as possible?

It would seem that this latter duty is doubly incumbent on us because the merits of different proposed laws are already the subject of editorial comment in the daily press.

INFANT WELFARE STATIONS AND EDUCATION FOR MOTHERHOOD.

The infant welfare stations have done and are doing excellent work in teaching mothers how to care for their children, but it is very apparent that we begin the education of the mother a little too late in the life of the child. Very few women apply to the stations until their child is sick, and not infrequently considerable damage is done before proper treatment is begun.

The ideal for which we must all strive is to have care of children form a part of the education of every mother. Such instruction is of far more importance to the nation than is much that is taught in the schools. However, it will be some time before child hygiene will become a part of the curriculum of the public schools. Until that time arrives we must find a substitute which will as a beginning focus attention on this most important subject.

This substitute is readily found in any city where there is an infant welfare station. These stations should offer courses in the care of children to young women, preferably those who have recently been married or those who are contemplating matrimony. The instruction should begin by helping weigh the children and by assisting about the station. Later, the pupil should be taken out to see the cases in their homes, and in conjunction with this instruction she should be given practical talks on the various phases of infant welfare.

Not only will the pupils be better able to care for the children which come into their homes but the personal contact with the poorer mothers will create in them a sense of civic responsibility which is highly desirable at this time. He or she who knows and appreciates the problems and the limitations of his neighbor will be better able to cope with the nation's problems, for much of the faulty legislation is due to failure to see the other fellow's point of view.

A few years of instruction such as is outlined here will pave the way for other welfare stations which in connection with the school system will offer instruction in the welfare of children.

MASSACHUSETTS GENERAL HOSPITAL OUT-PATIENT MONTHLY MEETINGS.

Beginning with the New Year, the Out-Patient Staff of the Massachusetts General Hospital inaugurated a series of monthly meetings at which brief communications upon medical and surgical subjects are read by members of the Staff. The meetings are open to all doctors, medical students, nurses, and social workers. The papers will be presented by men who have made special study of the matter under discussion, but at the same time they will be written for an audience not especially familiar with the subject. It is hoped, therefore, that these meetings will serve not only to bring before the Staff the work of its members, but to present to such general practitioners as care to attend the latest opinions upon medical problems.

The meetings are held between the hours of twelve and one, in the out-patient amphitheatre. The date and program of each meeting will appear in the Journal, and will be sent to any one requesting that his name be placed upon the mailing list.

The next meeting will be held on Friday, March 12th; the program will consist of five papers:

Some queer tumors	Dr. Torr W. Harmer
Goitre	Dr. Malcolm Seymour.
Early diagnosis and present treatment of syphilis	Dr. Henry D. Lloyd

Surgical aspects of syphilis
Dr. W. P. Coues

Report of two cases of echinococcus cyst of the lung.
Dr. G. M. Balboni
Dr. G. W. Holmes

MEDICAL NOTES.

JOHNS HOPKINS HOSPITAL.—It has been stated that in the fire which occurred on January 12 in the pathological buildings and in the laboratory of Dr. William H. Welch, none of the valuable specimens was lost, nor were any of the records of research work damaged.

CHAIR OF GYNECOLOGY AT THE UNIVERSITY OF PENNSYLVANIA.—A gift of fifty thousand dollars has been made from the estate of William C. Godell for the establishment of a chair of gynecology in the medical school at the University of Pennsylvania.

TYPHUS AMONG RUSSIAN REFUGEES.—A recent report states that there has been a new outbreak of typhus among the thousands of Russian refugees gathered near Narva, one hundred miles west of Petrograd. More than two thousand cases are reported in that vicinity. The epidemic is complicated by the prevalence of influenza and dysentery. The total number of cases of the three diseases under the care of the American Red Cross is nearly fifteen thousand.

The Red Cross is mobilizing a large quantity of disinfectants and will receive 20 doctors from Paris, as there are only 30 Russian doctors in Narva. A mild form of typhus has been prevalent for some time, but the efforts to stamp it out were hindered by the shortage of medical supplies.

CONGRESS ON MEDICAL EDUCATION AND LICENSURE.—The annual Congress on Medical Education and Medical Licensure was held in the Florentine room of the Congress Hotel in Chicago on March 1, 2, and 3. It was held under the auspices of the Council on Medical Education of the American Medical Association of American Medical Colleges. The following was the program:

March 1: Addresses by Dr. Arthur Dean Bevan, Dr. George Blumer, Dr. David A. Strickler, Dr. Ray Lyman Wilbur, Dr. Henry S. Pritchett, Dr. Harry P. Judson, Mr. Abraham Flexner; "Present Status of Medical Education," by Dr. N. P. Colwell; symposium on "The Needs and Future of Medical Education," Dr. George E. Vincent; "The Larger Function of State University Medical Schools," Dr. Walter A. Jessup; "Full-Time Teachers in Clinical Departments," Dr. William Darrach; "Research in Medical Schools, Laboratory Departments," Dr. Oskar Klotz; "Research in Medical Schools, Clinical Departments," Dr. G. Canby Robinson.

March 2: "Graduate Medical Instruction in the United States," Dr. Louis B. Wilson; "Interallied Medical Relations; Qualifying Examinations, Licensure, Examinations, Graduate Medical Instruction," Dr. Walter L. Bierring; "Essential Improvements in State Medical Licensure," Dr. John M. Baldy; "Interstate Relations in Medical Licensure," Francis W. Shepardson. At the afternoon session there were submitted Reports on Medical Teaching from the Committee on Medical Pedagogy of the Association of American Colleges. Dr. W. S. Carter delivered an address, and other physicians discussed various aspects of Anatomy, Histology, and Embryology, Physiology, and Biological Chemistry.

The session on March 3 was devoted to Pharmacology, Pathology, Bacteriology, Parasitology, and Public Health and Preventive Medicine.

INFLUENZA IN NEW YORK.—In New York the death rate for February 3 was 163 from influenza and 184 from pneumonia; new cases of influenza numbered 3629, with 580 new cases of pneumonia. On February 4 the number of deaths increased to 186 from influenza and 193 from pneumonia, the largest death rate since the outbreak of the epidemic; there were 3277 new cases of influenza, and 782 of pneumonia. Influenza cases of February 5 numbered 3126, with 152 deaths; there were 819 pneumonia cases, with 182 deaths. The report on February 8 showed a considerable decrease, with 1872 new cases of influenza, making a total of 58,442 cases during the epidemic up to that date. There were 513 cases of pneumonia, making a total of 12,032. Deaths from influenza since the beginning of the epidemic numbered 1755; from pneumonia, 3141.

Influenza Reports.—Reports from foreign centers indicate the widespread epidemic of influenza. A report from Copenhagen on February 4 stated that two-thirds of the Copenhagen garrison and many officers, doctors, and nurses were ill with the disease. On February 8, it was reported that influenza was spreading in Japan. A report on February 14 mentioned 68 new cases in Honolulu, with two deaths. There were reported 119 new cases on the island of Oahu, and 52 on the island of Kauai.

Effect of War on Malnutrition of Children in England.—Investigation of the health of Children in England during the war reveals the fact that their nutrition in general was bettered by war conditions. This is probably due in part to the fact that financially a large proportion of the families of the former working men and mill hands in England were improved; for instead of receiving what remained after the husband had spent Saturday evening at a taproom, the wife received regularly a certain proportion of his pay as a soldier, from a responsible agent. In addition, many women found employment in factories, thus increasing the family income. It is further true that much of the rationing of food had a beneficial effect; for in England, as in this country also, a considerable part of the family income is often expended on non-essential and even injurious foods. The examinations of school children showed that at the close of the war the ratio of undernourished children was less than half that in 1913, the year before the beginning of the war.

Venereal Disease Clinics in the United States.—The two hundred and fifty-three venereal disease clinics operating under the joint control of the United States Public Health Service and State boards of health, for the months of November and December, 1919, admitted 17,925 new cases, making a total of 52,343 under treatment. There were 236,036 treatments administered to the patients under the care of these clinics; 41,848 of these treatments were the administration of arsphenamine.

Coöperation of National Dental Association in Venereal Disease Control.—The following resolution was unanimously adopted by the National Dental Association at its twenty-third annual session held in New Orleans in October:

"*Resolved*, That the twenty-third annual convention of the National Dental Association of the United States, following the course already pursued by the advertising media, druggists, physicians, and the medical and allied colleges of the United States, hereby approves and indorses the propaganda for the control of the venereal diseases, undertaken by the United States Public Health Service, and hereby gives assurance that it will use its best endeavors not only to secure the interest and the coöperation of every member of the dental profession, but will also use its best endeavors to assist in the general plan outlined by the Public Health Service for the education of the civilian population in this vital subject."

Need of Doctors for Service in Eastern Europe.—The following announcement has been made by the New England Division Headquarters of the American Red Cross:

"The American Red Cross has received a call for forty doctors whose services in general will be in the eastern part of Europe and will extend for a period of from six to nine months.

The Red Cross desires to get men who have just finished their internship at hospitals and enlist them as first lieutenants. The pay will be two hundred and twenty-five dollars ($225.00) a month without maintenance but with travel expenses and living allowance in New York while awaiting sailing.

If men of wider experience than interns wish to consider this service, we plan to enlist them as captains with pay at two hundred and seventy-five dollars ($275.00) a month.

For further information physicians may communicate with Dr. Paul W. Kimball, American Red Cross, 108 Massachusetts Ave., Boston, Mass.

A Course in Nursing Service in Industry.—There is being offered during the second semester, from February to June, 1920, at the New York University, School of Commerce, Accounts, and Finance, a course in Standardization of Nursing Service in Industry. The course is arranged especially for industrial nurses, welfare workers, and those who contemplate entering the field of industrial welfare work. The course will include lectures and group discussions of the latest industrial nursing methods, first-aid service, first-aid equipment, and prevention work in the industrial plant. The students will be given an opportunity to make special investigations of nursing problems in large industrial plants, with particular reference to administration and organization. Special consideration will be given to such topics as: Duties and responsibilities of the nurse in small and large industries, methods of teaching the worker and his family how to keep well, most approved methods required for follow-up health service, relation of the nurse to the industrial community, home nursing and personal hygiene, reducing labor turnover through health measures, and the amount of hospital care available for the worker.

Red Cross Disaster Relief.—In the relief of suffering which has followed in the wake of disasters throughout the country, local and national Red Cross funds to the approximate amount of $421,000 were expended during the past year. The disasters reported resulted in a total number of six hundred and fifty deaths and eighteen hundred personal injuries: approximately fifty thousand persons were made homeless and a property loss of $25,000,000 was entailed.

BOSTON AND MASSACHUSETTS.

Week's Death Rate in Boston.—During the week ending February 21, 1920, the number of deaths reported was 483 against 275 last year, with a rate of 31.16 against 18.01 last year. There were 81 deaths under one year of age against 45 last year.

The number of cases of principal reportable diseases were: Diphtheria, 49; scarlet fever, 77; measles, 264; whooping cough, 81; typhoid fever, 1; tuberculosis, 36.

Included in the above were the following cases of non-residents: Diphtheria, 20; scarlet fever, 13; whooping cough, 2; tuberculosis, 5. Total deaths from these diseases were: Diphtheria, 4; scarlet fever, 2; measles, 2; whooping cough, 12; tuberculosis, 25.

Included in the above were the following non-residents; Diphtheria, 3; scarlet fever, 2; whooping cough, 2; tuberculosis, 1.

Influenza cases, 760; influenza deaths, 106.

NEW ENGLAND NOTES.

Influenza Reports.—A report from Providence, Rhode Island, on February 2 included 143 new cases of influenza, with 1 death from influenza and 2 from pneumonia. On February 3 the number of cases increased to 274, with 2 deaths from influenza and 5 from pneumonia. In Maine the reports have shown a continued increase, with 123 new cases reported on February 3.

War Relief Funds.—The New England Division of the American Committee for Devastated France has acknowledged contributions to the amount of $186,997.27. Contributions to the New England branch of the Italian War Relief Fund have reached $321,455.14.

Obituaries.

PHILIP COOMBS KNAPP, M.D.

Philip Coombs Knapp died February 23, 1920, at the Boston City Hospital, where he had served thirty-four years as visiting physician for diseases of the nervous system, the result of a final acute illness of several weeks duration due to cerebral thrombosis.

The son of Philip Coombs and Sarah Harriet Moore Knapp he was born at Lynn, Massachusetts, June 3, 1858. After attending the Lynn High School he entered Harvard College and graduated with the class of 1878, going on to the Harvard Medical School where he received the degrees of A.M. and M.D. in 1883, having served as house officer at the Boston City Hospital and at the Boston Lunatic Hospital before getting his diplomas. Dr. Knapp at once made a specialty of the diseases of the mind and nervous system, soon becoming known as one of the best read members of the profession in those departments. His clinical training, begun while a house officer, was advanced when in 1885 he became physician for diseases of the nervous system to out-patients at the Boston City Hospital. The following year and for a period of two years he held a similar office at the Boston Dispensary. From 1888 until 1913 he was clinical instructor in diseases of the nervous system at Harvard, teaching the students at his City Hospital Clinics, having been promoted to physician for diseases of the nervous system in 1886, an office he held at the time of his death. The growth of the neurological department from an out-patient clinic to an active hospital service with beds in the wards was due in large measure to the persistent efforts through a long series of years of the senior physician, Dr. Knapp.

Of a scholarly turn of mind, Dr. Knapp acted as translator and editor of Strumpell's Text-book of Medicine in 1887, 1893, 1901, and for still another edition in 1911. He published "Pathology, Diagnosis and Treatment of Intra Cranial Growths" in 1891 and wrote the section on "Nervous Affections Following Railway and Allied Injuries" for Dercum's text-book on nervous diseases in 1895, the year he was elected president of the American Neurological Association. Other works embraced: "Feigned Diseases of the Mind and Nervous System" in Hamilton's System of Legal Medicine, 1894; "Traumatic Neurasthenia and Hysteria, 1897; "The Treatment of Cerebral Tumors," contributed to the Boston Medical and Surgical Journal (1899), and another paper in the same publication (1900), "The Unity of the Acute Psychoses."

He served as a trustee and as secretary of the Boston Insane Hospital from 1897 to 1902 and was chairman of this board in 1902-3. Among other positions and memberships were: consulting physician to the Massachusetts State Hospital for Insane Criminals; president New England Society of Psychiatry, 1905-1908; fellow Royal Society of Medicine; member Neurological Society of the United Kingdom; Massachusetts Medico-Legal Society; American Institute of Criminal Law and Criminology; American Association of Medical Jurisprudence; Massachusetts Medical Society, and American Medical Association. His membership in both the American Neurological Association and in the Boston Society of Psychiatry and Neurology was active. He missed few meetings and generally took part in the discussions, speaking to the point in well chosen English. Only a few weeks before his death, when enfeebled by his brain lesion, he attended a meeting of the Boston Society of Psychiatry and Neurology and discussed two papers from the floor For several years he had had premonitions of his coming end and had suffered partial paralysis of leg and arm. Nothing daunted he gave no indication that he noted any disability, fulfilled all of his regular duties, made hospital visits, saw private patients and carried on his chosen lines of reading as in the past.

Dr. Knapp spent much time in court testifying as an expert witness in mental cases; as a diagnostician his reputation was extensive; he had a wide knowledge of current literature both in his specialty and in the domain of history and fiction; he read with ease German, French and Italian and got much from those languages.

In 1893 he married Mrs. Isabel Williams Stebbins of Springfield, who survived him. They had no children.

A native taciturnity leading to apparent indifference of manner concealed a warm hearted disposition and a loyalty in friendship that were recognized by his intimates. An omnivorous reader with a retentive memory, his mind was a storehouse of varied accurate information which was seldom volunteered but always cheerfully imparted in response to a question. This learned physician who did so much for neurology and psychiatry, filling an important place in the medical community, will be long remembered and sadly missed.

W. L. B.

MELVIN GEORGE OVERLOCK, M.D.

Dr. Melvin George Overlock died of chronic nephritis in Worcester January 30, 1920, aged 54. Born in Appleton, Maine, August 24, 1865, he received his early education in the public schools of Maine.

Coming to Worcester at the age of 20, he pursued his trade as a barber, some years later becoming a student reader in the office of a local physician. In 1896 he received a medical degree from Baltimore Medical College. He took an active partisan interest in politics and was thus elected trustee-at-large of the Worcester City Hospital, a position which he held until the recent failure of the City Council to re-elect him. He was also given, in 1907, by the late Gov. Guild, appointments as Medical Inspector of the Southern Worcester Districts; but incidental to the reorganization of the State Health Department, he was dropped from the list of inspectors.

Dr. Overlock was a prolific writer for the public press on various matters pertaining to public health, notably on the subjects of tuberculosis. He embraced the Catholic faith some ten days prior to his decease. He is survived by a widow and a married daughter.

JULIUS STIMPSON CLARK, M.D.

Dr. Julius S. Clark, long a prominent physician in Melrose, died at his home there January 27, 1920, after prolonged illness which began with pneumonia. He was born in Bristol, Me., on March 23, 1838, the son of Dr. Albert S. and Ann Herbert Clark. He was educated in part in Yarmouth, Me., and was graduated from Auburn Academy in that State and from Waterville College. He later attended Georgetown University in Washington, D. C.

At the first call for volunteers for the Civil War, Dr. Clark enlisted and fought with the Fourth Maine Infantry and rose from private to captain and was brevetted major. His entire army service during the war and afterward covered a period of six years. Following this, he entered the United States Treasury Department in Washington, and while there continued and completed his medical studies at Georgetown, graduating M.D. in 1869.

From 1870 until 1878 he was health officer, police surgeon and city physician for Louisiana, and by his experiments he demonstrated to the authorities that yellow fever could be kept out of this country. While in New Orleans Dr. Clark was married, on November 10, 1873, to Eliza I. Vemmand, of an old Southern family. It was not long after that they came North, to make their home in Melrose. His wife died several years ago, and the doctor is survived by a daughter, Mrs. Anita C. Warren, and two sons, Julius V. Clark and E. Greeley Clark, all of Melrose.

Dr. Clark was a member of Post 4, G. A. R., of Melrose and belonged to the Sons of Veterans, of which he was the oldest active member. He was also a member of the Massachusetts Medical Society, the Middlesex East District Society, which for some years he served as president, and of the Commandery of the State of Massachusetts, Military Order of the Loyal Legion of the United States. He was at the time of his death president of the medical board of the Melrose Hospital, and formerly was for many years medical examiner for pensions.

War Relief Fund.—The New England Branch of the French Orphanage Fund has received contributions to a total amount of $562,124.51. The Italian War Relief Fund, New England Branch, has acknowledged $321,997.52.

Miscellany.

REPORT OF THE JOINT COMMITTEE ON LEGISLATION OF THE MASSACHUSETTS MEDICAL SOCIETY AND THE MASSACHUSETTS HOMEOPATHIC MEDICAL SOCIETY ON MATERNITY BENEFITS.

Three bills have been assigned for hearing before the Committees of the Legislature on Public Health and Social Welfare, sitting jointly. The Spencer bill, Senate 200, the Carey bill, House 306, and the Young bill, House 1174, are all to be considered.

The *Spencer bill* provides that any woman a resident of the Commonwealth for one year shall be entitled to maternity benefits "who presents to the Department of Public Health at least two months previous to her anticipated confinement" satisfactory evidence "that she is pregnant and who is found by said department to be without means of providing the ordinary and proper care for herself or infant, or both, during a reasonable period before or after childbirth without thereby depriving the other members of her immediate family of the ordinary necessities of life."

Other sections of the bill provide that the names of recipients of the benefits shall be kept secret, and that appeal to a special board may be made if benefits are denied, that fraud shall be punishable, and that the father of an illegitimate child shall reimburse the State if his identity can be established.

Provision is made that any money benefit, which cannot exceed twelve dollars a week, shall be paid directly to the mother, but that neither the status of a pauper nor the stigma of pauperism is to follow the receiving of cash benefits. The bill provides that the recipient of the benefits of the act "must accept such instructions in general hygiene and infant care as, in the judgment of the Department of Public Health the individual case demands and in the discretion of the Department of Public Health hospital care or home nursing or both medicine and medicinal care and such obstetrical care as may be necessary."

"The recipient, if remaining at home, shall be allowed in all cases to choose her own physician, subject to said physicians acceptance of the fee schedule for such cases to be fixed by the rules and regulations of the Department of Public Health."

The *Carey bill* is so similar to the Spencer bill that it need not be discussed further than to state that it mentions no period in advance of the expected date of confinement at which application must be made.

The *Young bill* is a much simpler measure. It provides that "any woman (a resident of the state for over one year) who is pregnant and who desires advice, instruction nursing or medical care for herself or infant shall be entited to the benefits of this act, provided that she make application to the State Department of Public Health at least three months before the expected date of her confinement and provided that she accept and carry out such instructions in general hygiene and infant care," etc. (including hospital care), as in the Spencer bill. The Young Bill provides that the recipient of maternity care under the act if remaining at home shall be allowed to "choose her own physician subject to said physician's acceptance of the fee schedule for such cases, and other rules and regulations of the State Department of Public Health."

The act is declared to be a "public health measure and the maternity care granted under this act shall be granted free of cost to all persons entitled thereto regardless of their financial condition."

There is no clause regarding illegitimacy in the Young bill this year.

There are several minor differences between the bills.

Both make possible receiving prenatal care. Experience has shown that adequate prenatal care is one of the main factors in improving obstetric conditions. The Young bill is an improvement on the Spencer bill in that it requires at least three months' instead of only two months' notice before confinement. The Young bill requires that any instructions given by the State Department of Health be carried out; the Spencer bill that they be accepted. These differences would probably be removed without objection by the advocates of the Spencer bill. The illegitimacy section in the Spencer bill is considered by competent legal authorities as practically impossible to enforce and as therefore unwise of enactment.

The radical differences between the bills are these: The Spencer bill imposes on the State Department of Public Health the duty of determining the financial condition of any applicant for benefits and the duty of dispensing financial assistance to applicants found worthy. The Young bill provides maternity benefits for all who apply. The State is to pay the physician and to provide the nursing. Direct financial aid is not to be given by the Department of Health. The functions of local and State Boards and Societies in the way of giving financial assistance are not in any way interfered with. But this extraneous duty is not placed upon the Department of Health by the Young bill. The Spencer bill provides no control whatever over the physician provided he agrees to accept the stated fee. The Young bill provides that the physician must agree to accept the fee and abide by such rules as the Department of Health may establish. In this clause lies the opportunity to bring about better conditions of obstetric practice. And likewise a new and tremendously important step is taken in imposing duties on the Department of Health. How far reaching these new duties may become it is impossible to tell.

In Boston the result is hardest to foretell. The large, well administered obstetric clinics and hospitals which are connected with the various medical schools provide excellent care for patients and give admirable instruction to advanced students. Any step which impairs the efficiency of the existing hospitals will be unfortunate from the standpoint of the community as a whole. Any serious interference with the efficiency of teaching obstetrics will be a calamity to the State.

For several years, at least, it is probable that patients in need of free obstetric and nursing care will continue to go to the established clinics. These may, however, be seriously rivalled by capable obstetricians willing to accept relatively small fees where payment is absolutely certain. In the large manufacturing cities where no obstetric clinics are established and where midwives are plenty there is reason to believe that, as time goes on, capable obstetricians, tempted by the certainty of the fees, will supplant the midwives.

In the smaller towns where there are few physicians and no midwives it is difficult to see how obstetric practice is to be changed materially for a number of years. It is hardly to be expected that a great many patients will apply for benefits. It is possible that the practice of securing free nursing from the State and of having the physicians' fees paid by the State will become general. If it does, the financial cost will be ruinous. The State Department of Health would have the power to control such abuse by cutting down the fees to such a point that no capable physician would accept them. Incidentally, any good accomplished by the bill would be automatically destroyed.

It seems probable that if the public takes advantage of the bill gradually the medical profession as a whole will benefit financially. The tendency will be little by little to concentrate obstetric practice in the hands of those best qualified for it. There will of necessity have to be created a board of consultants as there are now District Health Officers. Adequate hospital facilities in all portions of the State will necessarily have to be provided in time.

The status of the individual physician will change. The profession as a whole will probably be benefited. The State will probably gain by securing services of better obstetricians and more adequate nursing. The financial burden on the State may be great. The strain on the State Department of Health will test severely the broadmindedness, the executive ability, and fairness of the Commissioner and his associates.

If legislation is to be enacted, it is earnestly to be hoped that it shall be the Young bill rather than the Spencer bill. Physicians wish the State Department of Health to continue to be a health and not a charity organization. They wish improvement to come about through educational methods. The Young bill would open this opportunity to the State Department of Health.

JAMES S. STONE, *Secretary.*

NOTICES.

SUFFOLK DISTRICT MEDICAL SOCIETY.—At the meeting of the Council of the Massachusetts Medical Society, held on February 4, 1920, it was stated that a number of delegates from different states to the A. M. A. had expressed a wish to have the 1921 meeting held in Boston. The Council voted to extend an invitation to the A. M. A. to meet in Boston in 1921, provided this would be agreeable to members of the Suffolk District Medical Society who, the Council appreciates, must do most of the work connected with this meeting.

A special meeting of the Suffolk District Medical Society is, therefore, called for Wednesday evening, March 10, 1920, at 8.15 P.M., at the Medical Library. It is very desirable that there be a good attendance as the question under discussion is one which will affect practically every member of the Society.

G. G. SEARS, *Vice-President.*
G. G. SMITH, *Secretary.*

NOTICE OF MEETING.—A combined meeting of the New England Roentgen Ray Society and the Boston Orthopedic Club will be held at Ware Hall, Boston Medical Library, Monday evening, March 15, at 7.45 o'clock.

Program: Speaker, Dr. I. Seth Hirsch of New York; subject, Some X-ray Observations on Bone Diseases. Discussion by Dr. Torr Harmer and Dr. E. H. Nichols.

HAMPSHIRE DISTRICT MEDICAL SOCIETY.—Regular meeting at Forbes Library, Northampton, on Wednesday, March 10, 1920, at 11.30 A.M.

Lecturer: Dr. Timothy Leary of Boston.

Dr. Leary is Professor of Pathology and Bacteriology at Tufts College Medical School, and Medical Examiner of Suffolk County, and is an interesting and forceful speaker.

E. E. THOMAS, M.D., *Secretary.*

RECENT DEATH.

DR. STAFFORD BAKER SMITH, a Fellow of the Massachusetts Medical Society, died at Washington, D. C., February 27, 1920, aged 37 years.

The Boston Medical and Surgical Journal

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Address.

ETHER DAY ADDRESS.*

Traditions, Standards, and Prospects of the Massachusetts General Hospital.

By Richard C. Cabot, M.D., Boston.

Our celebration of Ether Day this year has something the aspect of a reunion. Those of us who love and serve this hospital have not been together before for three years. But your foreign branch, your foreign representatives, whom you sent to do the foreign part of this hospital's work in France and England, did not forget the anniversary day on which the adherents and friends of this hospital are accustomed to gather up the traditions of their past, to take account of stock, and to ask for such visions of the future as may guide it fruitfully.

We celebrated Ether Day in 1917 at Bordeaux, in 1918 in London. The tradition has not been broken, at least so far as the loyalty and devotion of our leader, Dr. Washburn, could preserve it. He gathered us together in the chilly October of Southern France, in a bare and drafty building, to commemorate as best we could our home and our roots in this old institution at Boston. Again, in October of 1918, he gathered together in London such servants and graduates of the hospital as he could find, at a meeting honored by the presence and by the appreciative remarks of Sir William Osler.

Since the trustees have chosen for the speaker of this afternoon one who has no extensive or accurate knowledge of ether, and who can bring with him the prestige of no special achievements in science performed in another part of the country, but have selected a member of our own family group, it seemed to me proper that the topic for today should be one needing no special fitness on the part of the speaker except knowledge of the hospital and affection for it extending over thirty years.

Just three decades have passed since I first began to be acquainted with the multifarious and incessant activities of the Massachusetts General Hospital. Using my own personal knowledge of these 30 years, and supplementing it by the writings and recollections of others, I wish today to pass in review *the achievements, standards, and prospects of this hospital.* I shall pay special attention to the years since 1871, at which date the official volume narrating the history of this hospital terminates. In this survey I shall be guided by the belief that there are three main functions, by success or failure in which any hospital should be judged. It is the business of a hospital:—

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* Address delivered at the Massachusetts General Hospital, on the seventy-third anniversary of Ether Day, October 16, 1919.

a. To apply the best of existing medical and surgical knowledge to the comfort and healing of body and soul.

b. To extend this knowledge through example, teaching and research.

c. To extend our vision and our influence beyond the hospital's walls.

The first two of these purposes comprise what may be called the *domestic policy* of the hospital and the third its *foreign policy.* Medicine like charity begins at home. Our first and foremost duty must be our ward service, the detailed care of such patients as we find day by day in the wards and in the Out-Patient rooms of our hospital. This has been somewhat cynically spoken of as the duty of "maintaining a repair shop." Surely we must maintain a repair shop and an excellent one. The repair of his wounds and ills is what the patient most poignantly desires. But we have never been merely a repair shop. Our attack upon the body's ills has never been merely the mechanical and the chemical attack, for mechanics and chemistry can be applied as well to the body of an automobile as to the body of a man. From the very opening of this hospital, September 3, 1821, when the first patient was received, Dr. James Jackson and Dr. J. C. Warren set a standard for the care of patients which in many respects we cannot hope to excel. They realized from the first that it was unscientific as well as inhuman to ignore the sick mind in the sick body, to forget the one function which integrates and represents all the other functions of our organism. As they ministered day by day to diseased bodies we can imagine these first leaders of our hospital traditions confronted with the pathetic question: "Canst thou minister unto a mind diseased?" In their life and practice the first physicians of this hospital answered "Yes." And they answered so clearly and consistently that their influence, the tradition of Jackson and Warren, has persisted, I believe, even to this day.

In the *Annual Report* for 1867, the precise but uninspired style characteristic of our annual reports rises to true eloquence for once in their hundred years' extent. That was the year of Dr. James Jackson's death, and in the resolutions upon this event the trustees say:

"His personal as well as professional qualities, his activity without imprudence, his decision without dogmatism, his conscientiousness that never provoked, his exhaustless sympathies which made him the father or the brother, as well as the physician, of those to whom he ministered, bearing their troubles as his own and alleviating by the charm of his presence the pains he could not remove by his skill,—his unwearied study, his fruitful knowledge, his contributions to the science and literature of medicine, and his relations to the older and younger members of the profession gave him a position at the hospital as exclusively his own as that which he held in the community."

Since that time our daily ward service has represented, I think, the conscious attempt to continue that tradition unimpaired. To make possible the continuity of this standard it has been necessary that the trustees should consider always the *character* as well as the professional attainments of those appointed to serve in the hospital wards. Men of conscience, of culture, of sympathy and integrity have been constantly appointed upon our staff. The intellectual and moral standards of this staff have been always its most impressive lesson to the long procession of house officers and junior physicians who have passed through this hospital.

Some years ago two very promising young house officers graduated from this institution and settled with brilliant financial prospects, one of them in Cincinnati, the other in Chicago. Within two years each of these men wrote independently to a member of our staff asking if it would not be possible for him to come back here on some terms. They were willing to give up first-rate financial prospects for a bare subsistence in this neighborhood, because their contact with the tradition of Jackson and Warren as passed down to them by such physicians as Dr. Frederick C. Shattuck, Dr. James Minot, Dr. E. C. Cutler, and Dr. John Collins Warren had spoiled them for commercialism in medicine. They had found here certain ethical and intellectual standards taken as a matter of course. I mean the wise man's honest confession of ignorance, the absence of suspicion, secrecy and backbiting, the rule of fairness to others, the habitual thoroughness of examination, record and subsequent study, the habitual courtesy under conditions which tempt us to a bald and mechanical type of intercourse, —all this had sunk into their minds as it has sunk into those of generation after generation of young physicians passing through their period of service in this hospital.

These high standards in the performance of the day's work involve the double ability to *find* interest in what seems monotonous and to *bring* interest into it. The ability to be astonished and to be delighted is one of the most reviving and sustaining characteristics of the tradition passed on by our staff. I shall never forget the enthusiasm, the lighted eye and the kindled accent with which Dr. Frederick C. Shattuck was accustomed when confronted with a fine example of disease, to say, "God bless my soul! Did you ever see anything like that?"

This spirit has been possible because the members of our staff have been accustomed to bring the best of themselves with them to the hospital and not to leave behind them at home, all except their technical equipment. They have brought with them to the hospital not merely their keen intellects and their well-stored memories, but their other human interests. For example, it is recorded that Dr. J. Mason Warren used often to bring his children with him upon his hospital visits, and many of us remember an amazing and mirth-provoking dachshund, which followed Dr. Shattuck about the wards. So Dr. Whittier brought always his still burning memories of the Civil War.

We should be foolish to ignore here the influence of heredity. If medical science has taught us anything it is that *blood tells*, that stock is a fundamental factor in human worth and achievement. Hence, the better members of our staff have passed on the accumulations of a hundred years of strenuous, intelligent and conscientious living, the gleanings of two continents, the fruits of humane culture.

It has never been better exemplified than in this hospital that true greatness is characterized especially by modesty and unpretentiousness, that merit does not have to trumpet its claims by titles or decorations nor to hedge itself around with a wall of aloofness. Our models and teachers in the daily work of the wards have been as ready to learn as to teach, and to learn even from their youngest and crudest assistant.

The tradition that I have tried to describe is, I believe, a genuine and persistent characteristic of our city. Boston is no longer a literary centre, if it ever was; but the practice of humane and skilful service is, I believe, as strong with us at this hospital today as it was a hundred years ago. It is a tradition that holds fast something of the best yet achieved here, thus by conservation making true progress possible. And because many men have built their lives into the structure of this tradition, giving the best they had to offer, the spirit of this tradition is greater than that of any single man, yet has an individuality all its own.

II.

In Tables I and II I have jotted down some of the most important items of our achievement, noting first our material expansion and second some improvements in the quality of our service. We have become better, I think, as well as bigger. But I will speak of our material growth first, though in some cases our growth in size has meant an improvement in quality.

The first twenty years of the hospital's life saw the beginning and expansion of the Bulfinch building, the corner-stone of which was laid July 4, 1818, a centenary which, so far as I know, we did not notice or commemorate last year.

MATERIAL EXPANSION.

The first important additions were the group of buildings comprising the Thayer dormitory for nurses, and those which we ordinarily call the "lower wards," A, B, C, D, E, built during the years of 1874 to 1888 and providing a type of service but meagrely secured in the older building, I mean the advantage of private rooms. In 1896 came the construction of the new pathological laboratory and the power house. With this laboratory we secured one of the most important improvements in the quality of our work, the genius of Dr. James H. Wright as director of the new pathological laboratory. All that now goes on in that busy and diversified structure had to be done till 1896 in a dark and narrow closet which now makes up a small section of the Warren Library, a closet about 10 feet by 6.

Between 1900 and 1903, some of the most important of the buildings now in use were added, including the new operating building, the domestic building, and last but most important, the new Out-Patient building. By these three new structures I think we can say that the daily work of the hospital took on quite a new complexion. I noticed at once an improvement in the patients' diet, resulting from the new kitchen arrangements of the domestic building. The new operating building made possible much better organization and multiplication of the necessary surgical operations, while the new Out-Patient building, the finest of its kind in the world, brought to the notice first of ourselves and later of the rest of the country, the central significance and value of Out-Patient work.

In rapid succession followed the building of the dermatological and orthopedic wards, and not long after, of the new nurses' home. Finally, in 1915 and 1917, came the last and, in some ways, most important additions to our plant, the Moseley Administration Building (1915) and the Philips House (1917).

But this material expansion which enabled us to care for more patients and give them better service, has been still further increased by improvements in organization and in treatment, through which we have cut down the average stay of the individual patient from 11 weeks, as it was in 1855, to 18 days, as it was in 1898, and approximately 17 days, as it is now. This enables us to give greater public service without increasing the size of our expensive urban plant. The plans for a country branch of this hospital now taking shape in the minds of the trustees will enable us to cut the patient's stay in this urban hospital still shorter and so to serve more people.

Table I. Some Significant Dates.

1869	Lady visitors to female patients
1870	Lady visitors to male patients.
1871	Dr. R. H. Fitz, microscopist.
1873	Nurses' Training School organized.
1889	Dr. R. H. Fitz, pathologist. (Appendicitis, 1886.)
1896	Dr. J. H. Wright and Pathological Laboratory.
1903	New Out-Patient Department; also Children's Service and Skin Ward.
1905	Dr. J. H. Pratt and Dr. John B. Hawes aggressively attack T. B.
1905	Social Service.
1907	Dr. F. A. Washburn's Administration begins.
1907	X-ray Department.
1908	First Continuous Service begins (Dr. F. C. Shattuck).
1909	Practitioners' Courses.
1911	Surgical Residents (Paid).
1911	Staff Reorganized—Executive Committee; Dr. D. L. Edsall arrives.
1913	Department of Syphilis (Drs. Abner Post and C. Morton Smith).
1913	Department of Industrial Diseases (Dr. Wade Wright).
1913	Clinic Secretaries.
1913	Medical Resident (Dr. W. W. Palmer).
1913	Out-Patient Department fee raised to 25 cents.
1915	Dr. Washburn proposes consultation clinic for persons of moderate means.
1915	Case records begin to be circulated.
1917	Philips House.
1918	Dr. Edsall organizes research.
1918	Trustees plan hospital for persons of moderate means.

IMPROVEMENTS IN THE QUALITY OF SERVICE.

a. Diversification of Service. It is characteristic of the personal devotion traditional in our profession that the doctor is wont to try to do, himself, everything or nearly everything that needs to be done for the patients. Thus in my uncle Dr. Samuel Cabot's time, when the use of the clinical thermometer was introduced, all temperatures were taken by the physicians themselves. No nurse was allowed to use so delicate an instrument of precision. So until very recently it was thought a heresy akin to scandal to suggest that patients could be admitted to the hospital wards or to the Out-Patient Department by anyone except a physician. Yet this portion of our routine has long since passed over to *nurses.*

In a similar way a considerable portion of our laboratory work has passed into the hands of *paid technicians* assisted by *volunteers*, and fourth-year medical students are now employed as *clinical clerks* a considerable portion of the year to do work previously thought proper only for a graduate physician.

The management and marshalling of patients in the dispensary clinics, which used to be performed by frantic and hasty medical assistants, is now quietly and deftly performed by our volunteer *clinic secretaries.*

In the treatment of patients we have summoned to our aid not merely the nurses who have always done so much of it, but special *therapeutic assistants* in the departments of hydrotherapy, mechanotherapy, massage, and in the dietetic management of diabetes. Cure by occupation is so well established in our wards, owing largely to the devotion of Miss Brackett.

Something of the variety and volume of service now given in this hospital can be seen from Table II (Persons Serving the Hospital). The volume of service is seen in Table III.

Here I should like merely to note in connection with the therapeutic assistants in the field of hydrotherapy, that this branch of service began in June, 1824, when a cold and warm salt-water bathing house was erected on the seashore, which then directly touched our walls.

Table II. Persons Serving the Patients at the Massachusetts General Hospital.

Trustees		12
Consultants		12
Committee members		46
Physicians and surgeons		216
Research physicians		9
Nurses		455
Orderlies and maids		77
Technicians		8
Social Service	Paid	24
	Volunteer	61
Clinic secretaries and laboratory volunteers		32
Therapeutic assistants		5
Library staff and O. P. D. records		15
Household staff		112
Engineers, carpenters, gardeners, chauffeurs, etc.		17
Clerical staff		20
Total		1121

Table III. Population Served by the Massachusetts General Hospital (1919).*

Ward patients (1917)		6,699
Out-patients, new (1917)		31,104
Out-patient visits (1919)		205,524
Case record subscribers		1,803
Physicians (2 weekly public exercises)		100†
Students	Social work	15‡
	Medical undergraduates	270
	Medical postgraduates	300
	Nurses	224
Total (omitting out-patient visits)		40,515

*Except as noted in first three items. † About. ‡ A week.

CONCENTRATION OF ATTENTION AND ATTACK UPON DISEASES ONE AT A TIME.

In 1905, through the energy and ingenuity of Dr. J. H. Pratt and Dr. John B. Hawes, the hospital assumed a new attitude towards one disease,—tuberculosis, an attitude which, I think, may be characterized as *aggressive*. Instead of waiting passively for disease to present itself at our doors in the persons of individual patients, we began to seek it out in its own lairs with the hope of crushing it altogether. The attack upon *tuberculosis* was followed not long after by an attack upon *syphilis* as a separate disease, and by the organization of our syphilis clinic under Drs. Abner Post and C. Morton Smith. I venture to believe that this clinic has no equal in this or any other country, and that its success is due to the amount of attention and interest concentrated upon a single group of patients whose problems are so much the same that unusual skill can be accumulated in dealing with them.

Following the example of Dr. Pratt's tuberculosis class, Dr. F. G. Brigham organized, five years age, our first class for *diabetics*, which has since been a very useful and instructive feature of our work. During the *poliomyelitis* epidemic this disease was also treated in a clinic by itself. *Hay fever and asthma* are now receiving the advantages of a special clinic, and staff, the advances in our organization corresponding with the advances in our ability to treat these diseases successfully.

The clinic for *industrial diseases* established by Dr. Wade Wright just before the war emphasized two principles: first, that just exemplified, the concentration of attention upon one group of diseases in isolation from the rest, and second our increased awareness of the industrial world and the mischief wrought by it, an awareness shared by the hospital with the rest of society at the present time.

SOCIAL SERVICE.

In 1905 came the organization of social service work, which after a precarious and checkered career has now become an established part not only of this but of all other first-rate hospitals in this country, and has recently taken root, through the efforts of your foreign service branch, in France.

THE CIRCULATION OF OUR CASE RECORDS IN THIS AND OTHER COUNTRIES.

Since 1915 the benefits of some of the knowledge gained in our hospital have been spread to cities and countries very far from our gates. It has always been the policy of this hospital to serve the physicians not connected with its staff, so far as this service was consistent with the best welfare of its patients. But now, by means of published records of our work sent out each week throughout this and other countries, we are enabled to extend our service very much further than was possible before 1915.

The standards of this hospital, its standards of record systems, of physical examination, of pathological examination after death, and of diagnostic reasoning are thus made of value outside our walls.

TABLE IV. SUBSCRIBERS TO "CASE RECORDS."

United States (Massachusetts 96)	1,491
Canada	65
South America	16
West Indies	11
Canal Zone	2
Hawaii	4
Philippines	6
Europe	18
Asia	11
Africa	2
Australia	101

CLINIC SECRETARIES.

I have already mentioned the advantages in the administration and organization of our Out-Patient clinics that have resulted from the introduction of clinic secretaries. This was primarily the work of Mrs. Roger I. Lee, then Miss Ella Lyman, who was the first to demonstrate to the hospital authorities that a young, well-bred but unskilled girl could accomplish something of signal usefulness in the medical routine of the institution. There is nothing like this, so far as I know, in any other hospital, but doubtless, like the other inventions of this institution, it will be imitated elsewhere.

CONSULTATION CLINIC FOR PERSONS OF MODERATE MEANS.

Just before the war, owing to the progressive attitude and foresight of Dr. F. A. Washburn, the hospital took the radical step of establishing in the Out-Patient Department a clinic at which persons, on the payment of $5.00 were able to get the combined services of the different medical specialties now necessary for a thorough diagnosis and rational treatment of disease. It is becoming increasingly obvious that no single physician is wise enough to furnish all the data necessary for a modern diagnosis. The coöperation of laboratory experts, x-ray experts, specialists in the different fields of medical diagnosis, is often necessary if a common disease such as rheumatism or stomach trouble is to be traced to its causes and properly treated. This clinic for persons of moderate means, unable to pay for the services of all the specialists needed for the proper study of their cases, was an innovation in medical service and pointed the way to another of the most important extensions of policy ever made in the history of this hospital, namely:

The Rounding out of our Hospital Plan and Policy so that we may Serve all Classes.

In their last two reports the trustees of this hospital have taken a step involving, I think, signal foresight and courage. They have resolved to put this hospital as far and as fast as they can at the service not merely of the poor, as it was before the erection of the Phillips House, or of the poor and the rich, as it now is, but of *all* classes, including the numerous persons of moderate means who now receive a most unsatisfactory type of medical service. The poor and the rich can get up-to-date treatment, the great body of those financially intermediate cannot.

THE ORGANIZATION OF RESEARCH UNDER THE DIRECTION OF DR. EDSALL.

I have passed over without mention the brilliant discoveries of Morton, of Henry J. Bigelow, and R. H. Fitz, which brought reputation to this hospital in the earlier years of its existence. It is not likely that the quality of their scientific work will be exceeded in the future. But it may be pointed out that the work of these men resembled in some ways the gains of the earlier Harvard football teams. It was done by bold and brilliant individualists. It was not organized or put into the hands of those whose chief purpose centred here.

The beginning of this new organization of research work is due, like many of the best things that have happened in this hospital of late, to the advent of Dr. David L. Edsall. Hitting the high points in the hospital's history we might say that the tradition of service established by Jackson and Warren, the brilliant discoveries of Morton, Bigelow, and Fitz, and the better organization introduced by Washburn and Edsall represent the peaks of our achievement.

PROSPECTS.

I.

CLOSE COÖPERATION OF TRUSTEES AND STAFF.

What now of the future? One of the best promises of our future growth is contained, in the striking increase in activity and interest manifested by the Board of Trustees in recent years. I say manifested, for what I am speaking of is wholly what the staff is able to see.

Until within recent years the staff has known that the trustees were at the helm, guiding our vessel wisely. But we have seen and known but little of them and their activities. Now we are in constant touch with them and we know that they are carrying out the old tradition of the hospital in their present proposal to appeal for new hospital funds.

This is perfectly in line with our traditions. In 1816, although the foundations of the hospital had not then been laid, the trustees decided to make an appeal in behalf of the institution over which they nominally presided. After issuing letters and circulars they "divided themselves into four committees and abandoning their private affairs for a season they went through the streets day after day soliciting subscriptions from all," and in this way raised $846,000 within a few days. Doubtless we shall soon see committees of our trustees taking to the streets on a similar errand of mercy.

II.

Bringing the Best to Us from Other Cities.

Judging from our path as we look backwards over it, we may hope to continue a reform begun in the medical service and in the department of pathology, namely, the infusion of new blood into the hospital by bringing here the best men obtainable from outside our city. It is not enough for the hospital to do its ward work conscientiously and to organize teaching and research within its walls; *it must also extend its influence and its vision extramurally*. One of the first results of such a vision will be to bring us new blood. Dr. Edsall, ever since his coming, has personified in our executive committee and in all our councils a wide awareness of what is going on in other medical centres of this country. He has never let us fall behind or get left out of any of the important movements towards better service occurring elsewhere.

May we not hope that some arrangement may be made here such as has been made at the Mayo Clinic, whereby our awareness of what is going on in the medical centres of this and other countries may not be left to chance or to the transplantation into our midst of a single enlightening personality like Dr. Edsall? As we recently sent Mrs. Myers, the head of our medical library, on a trip to familiarize herself with the other medical libraries and record rooms of the country, as we recently took advantage of Dr. Paul D. White's journey to England to have him bring back to us the best of knowledge and of new instruments for the study of the heart, so we ought to hope that in some way the hospital will provide for a constant stream of new information from outside our walls.

III.

The Study of Intake.

We have begun at last to study intake. A new and enlightening policy of the trustees now focusses our attention upon the question: "Are we now taking into the hospital such persons as we can best serve?" Hitherto we have been passive in this matter. We have indeed selected among those who came to us, but we have never reached out to inquire whether there were any others who needed us as much as those whom we are now serving, or perhaps more, but who are not aware of our existence or cannot gain admission here. Perhaps we shall soon be bold enough to make this hospital really known as it should be known to those who need it. The word "advertise" is not in line with our traditions, but we must accomplish the same results without the word.

IV.

Medical Organization for the Public Good.

Our recent achievements and plans make it possible to hope that in the future we shall organize medical service for the public's good without any fear of an indignant medical minority. We have seen so much of late of the tyranny of minorities in other fields that I think we are awakened as never before to their dangers. If we serve the community as we should we shall certainly arouse the indignation of some of the less enlightened of our professional brethren. We have done so already and served the public by so doing. We must be prepared to do so again.

V.

Exchange Services and Teachers.

This year for the first time so far as I know in our history a member of the staff of this hospital has been giving medical instruction in another hospital, the Peter Bent Brigham. This may well enough become a fruitful precedent. Why should we not have exchange professors and exchange hospital services along the lines already laid out in the hospital last referred to? Surely such an exchange would increase our vision, extend our influence outside our walls and bring new life within them.

VI.

Hospital Work Samples Health Conditions in the Community.

It seems to me almost inevitable that we shall take more and more part in the life of the community outside our walls. The patients who come to us present a sample of conditions as they exist in the community outside. As a bucket let down into the artesian well or into the ocean brings up from the bottom a sample of what is widely distributed there, so a patient with lead poisoning, with tuberculosis, with a court record, with a truancy record, brings us into touch with conditions which we should not ignore. We can serve the community by assisting the schools, the courts, the industrial plants, and the public health authorities to quell the diseases of which we see samples in our Out-Patient clinics or in our wards.

VII.

End Results.

We still know far too little about the progress of our patients after they leave our wards. The rebukes and warnings of Dr. E. A. Codman in relation to our ignorance of our end results are for the most part deserved. From the point of view of science as well as of humanity, in order that we may improve our prognosis and our treatment, we ought to know more of our results. This will cost money and time, but without it we shall not be keeping up with our traditions.

VIII.

Therapeutic Research.

I cannot but hope that the organization of research under the leadership of Dr. Edsall will result in making the general plan and trend of American medical research less one-sided. We have had a tremendous amount of investigation into the causes and nature of disease. We needed it all and more. But surely we should balance it by more investigation of prognosis and therapeutics. Investigation into the treatment of disease languishes in this country. Who can undertake it better than the research group now developed at this hospital under the leadership of Dr. Edsall?

IX.

University Connection.

Can we not unite ourselves with some of the academic departments of Harvard University, both for their benefit and ours? The departments of sociology and psychology, of physics and chemistry surely have something to give us and something to learn from us. Are we not neglecting some of the opportunities presented by our closeness to this great university?

X.

Better Care of Convalescents.

The trustees' plan for a country branch and the present concentration of *interest in convalescence* through (a) occupational therapy, (b) physical therapeutics, and (c) the special interest of Dr. John Bryant, leads me to hope that we shall take the lead in solving the largely neglected problems of convalescence. It is unfortunately true that in our ward work we lose some of our interest in the patient when he begins to convalesce. This means a loss of efficiency in the institution as well as an injustice to the patient. The convalescence of our patients might be shorter as well as more complete if we put more energy and more attention upon it.

I have passed in rapid and sketchy review what seems to me most important in the standards, achievements, and prospects of this hospital. As we grow in size and in numbers shall we be able to keep the Jackson-Warren spirit? Or as we develop into a huge and diversified industry shall we become as mechanical and as soulless as a factory?

We shall avoid it, I think, by the organization of a small, relatively independent units within the hospital. The homelike and humane spirit of a small institution such as this hospital was in the first half century of its existence, can be kept, I hope and believe, if we can organize the different parts of the institution into relatively self-sufficient units in each of which the advantages of smallness and intimacy can be preserved.

Shall we be able to conserve what is best in our traditions and yet to grow with our time?

I believe so, because we shall take the best of what is new from outside our walls and domesticate it here, as we have domesticated Dr. James H. Wright and Dr. Edsall, and always aware that because we have done good work in the past we all the more need reforming. I believe we have never done work as good as we are now doing, and yet I trust that we shall never in future do work as poor.

Shall we be able to keep in organic unity the three proper activities of a hospital?

I believe that we shall not lose the tradition of a high standard of daily work because we shall never lose our connection with humane culture, maintained through the interest and visits of our trustees, of our lady visitors, and of our volunteers. I believe that we shall not lose the spirit of scientific research because we shall realize that only by teaching and research, only by ever closer connection with academic institutions can we free ourselves from the evils of routine and of stagnation. Science is the foe of stagnation. "I read," said Thomas Arnold, "*enough to keep my mind in the state of a running stream;* for it is ill drinking out of a pond whose stock of water is merely the remains of the long past rains of the winter and spring, evaporating and diminishing with every successive day of drought."

We shall keep the scientific spirit, the spirit of the running stream because it is necessary to avoid stagnation in our routine ward work.

We shall keep our influence and our vision upon the world outside our walls through the establishment of exchange services and exchange professorships, through the initiative of our social service department and through the cosmopolitanism of the best members of our staff.

Original Article.

THE SPECIFIC TREATMENT OF HAY FEVER.

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The treatment of hay fever by means of repeated injections of the specific pollen which causes it is, in these times, a well established therapeutic procedure, yielding results which are on the whole very satisfactory. These results are, however, often irregular and by no means perfect. The purpose of the present work is not only to detail the results of treatment in ninety-one cases of hay fever, but also by studying the irregularity in the results to try to throw light on the mechanism of the disease.

CLINICAL MATERIAL.

This report is limited to the study of cases of ragweed hay fever. The typical patient has violent sneezing, copious nasal discharge, red, running eyes, a peculiar irritation at the root of the nose, sleepless nights, and is often definitely incapacitated for work—in other words, has "hay fever," which begins on some definite day, in New England, usually about August 15, and lasts until the time of the first frost, usually about October first. During the rest of the year, the patient is perfectly well. Such a history is so typical, that in itself it is usually quite sufficient not only for the diagnosis of hay fever in general, but for the exact diagnosis, in this locality at least, of ragweed hay fever in particular.

This typical patient will give a skin test when the extract of ragweed pollen is dropped into his conjunctival sac, rubbed or scratched into his skin, or injected between the layers of his skin. Successive doses of this same extract given before and during the ragweed season, will usually relieve the symptoms as will be discussed later.

The 91 cases in this study have been followed not only through the hay fever season but each of them has, after an interval of at least four weeks following the normal end of the ragweed season, been either seen personally or has answered a letter of inquiry so that the results of treatment as a whole have in this way been checked up by a retrospect of the entire hay fever season.

Nineteen cases, although treated with equal care, have not been included in this report, because the final result, as noted in retrospect, has not been known to the writer.

RAGWEED EXTRACT.

The material used in diagnosis and treatment consists of an extract of ragweed made as follows:

1.0 gram of ragweed pollen separated by means of carbon tetrachloride from the dried ragweed flowers (according to the method of Wodehouse[1]) was added to 100 c.c. of salt solution containing n/200 sodium hydrate and 0.5 c.c. carbolic acid. The suspension was allowed to stand for three days with occasional shaking, after which it was filtered first through paper to a water-clear, amber colored fluid and finally through a Berkefeld-N filter. This filtrate was found to be sterile and a total nitrogen determination by the Kjeldahl method gave approximately 0.2 mgm. of nitrogen per c.c. Subsequent extractions of pollen with this same technic invariably gave approximately the same nitrogen figures, so that a 1-100 solution of pollen in this diluent contains 0.2 mgm. of nitrogen per cubic centimeter.

No attempt was made in this work to provide fresh extracts of pollen. The stock solutions (1-100) were kept on ice, sealed with paraffine and from them samples were taken as needed and diluted. Such samples did not sediment out or otherwise change in appearance even when kept at room temperature for over two months. Their potency did not diminish nor was there any evidence that their toxicity increased.

In testing these patients, the intradermal method has been used almost exclusively, the original extract being diluted one to ten to make pure pollen 1-1000, which is equivalent to 0.02 mgs. N per c.c. The tests were controlled in each case not only with a similar injection of carbolized salt solution and an injection of some other pollen extract as, for example, red top or timothy, but were also controlled by injections of a horse hair extract in order to demonstrate that the reaction is specific and to determine whether the sensitization is single or multiple. Golden rod extract was not used as a routine. All these protein extracts were diluted so as to contain the same amount of total nitrogen per cubic centimeter. It may be noted in passing that a similar intradermal test using the 1-100 strength was invariably negative in all normal, non-sensitive individuals.

THE METHOD OF TREATMENT.

For treatment patients were urged to present themselves six weeks before the usual onset of their hay fever. The first dose was almost always set empirically at 0.05 c.c. of the weak (1-1000) dilution. If the skin test (always made by injecting 0.02 c.c.) gave a large reaction, no further treatment was given on that day. Succeeding doses at about five- to seven-day intervals were in each case determined according to the amount of local reaction following the previous injection. If this was slight so that the local swelling did not exceed 1-2 cm. in circumference, the succeeding dose was doubled and often trebled. The doses were continued at least a week after the usual onset of hay fever and in a few cases were continued even until September first or later.

It is obvious that many factors come into play influencing the successful treatment of the individual case. No two cases of hay fever are exactly alike; their symptoms, their age at onset, the duration of the disease, the family history of hypersensitiveness as manifested by asthma, hay fever, urticaria, etc., are always variable. The skin tests are variable. While all these patients gave a typical urticarial wheal with its irregular outline, sharply defined margins, and surrounding zone of erythema, there were many individual differences. The reaction appears in one case within two minutes, in another case not for ten minutes; in one case the wheal measures fifteen millimeters in diameter, in another perhaps sixty.

The family history was investigated in a total of 91 patients and was found positive in only 23 (25.2%) which is less than half the figure given by Cooke[2] and also by Rackemann[3] in his cases of extrinsic asthma.

The technic of treatment comprises not only the date of the first dose but the number and frequency of treatments, the size of each dose and the total duration of the treatment.

All these features will be discussed at some length later but first of all the total results will be presented.

RESULTS.

Out of 91 patients, eight (or 8.9) were entirely relieved and had no symptoms of hay fever; 37 (40.6%) were greatly relieved; 20 (22.0%) showed considerable improvement; so that 65 (71.5%) were definitely improved. Fourteen patients (15.4%) showed some relief, while 12 (13.1%) had absolutely no relief or were even worse.

These figures compare favorably with the results obtained by other writers. For example: *Clowes*[4] reports that 25-30% show a marked alleviation of symptoms and a further 30-40% show a marked improvement, while the rest are unaffected. He uses a watery extract of pollen which has first been dehydrated with acetone and ether.

Cooke and Vander Veer,[5] using an extract much like the author's, report that of 251 patients treated for late (ragweed) hay fever in 1915, in 16.3% of their cases, hay fever was absent or insignificant; in 43.8%, it was greatly diminished; in 15.5%, it was slightly diminished, while it was as bad as usual in only 4%. *Koessler*[6], using a pollen extract purified by alcohol precipitation and subsequent resolution in saline, treated 37 cases of fall hay fever with these results:

Markedly free, 29 cases (78.4%)
Not improved, 8 cases (21.6%)

Solomon, Strauss, and Frank[7], in a review of 241 cases of all kinds of hay fever treated with pollen extracts and reported prior to 1916, say that 45 (18.6%) were entirely relieved, 157 (65.1%) were somewhat relieved and 38 (15.6%) not changed.

TECHNIC.

In the present series, treatment was begun in 51 of the 91 cases during the first two weeks in July. Of these 51 patients 5 (or 9.8%) were entirely relieved, while another 34 (or 68%) were very much improved. Of the 40 patients whose treatment began after July 15, only 3 (or 7.5%) were entirely relieved and 24 (or 60%) were improved. In only 8 cases was treatment begun after the onset of symptoms.

Doses were given at five- to seven-day intervals and although a few patients received many more doses than these, the average number was three to four doses of 1-1000 and four to five doses of 1-100. Throughout this work only these two dilutions were used, as it was felt that in order to measure the ragweed protein, quantities of nitrogen were more important than quantities of weaker or stronger solutions. By means of the pipette syringes (described by Terry[8]) very small amounts of total fluid could be given with considerable accuracy. The total dosage, as expressed in cubic centimeters of the 1-100 strength, averaged about 1.5 c.c., varying from the minute quantity of 0.005 to the relatively large dose of 3.624. The late cases —treated during symptoms, eight in number,— are of sufficient interest to warrant the inclusion of the summary of their treatment.

It is interesting that two of them were completely relieved of symptoms although in four others the results were hardly satisfactory.

Table I.

Eight Cases Who Began Treatment After August 25.

Name	Date First Dose	No. of Doses 1-1000	No. of Doses 1-100	Last Dose	Date Last Dose	Total Dose	Summary
F. W. R	Aug. 28	4	0	0.10 (weak)	Sept. 11	0.060	++++
J. Q.	Aug. 28	4	3	0.30	Sept. 15	0.620	+
J. C. C.	Aug. 29	3	5	0.80	Sept. 25	1.085	++++
F. P. A.	Sept. 2	2	2	0.25	Sept. 11	0.325	+
C. A.	Sept. 2	4	1	0.05	Sept. 15	0.100	0
J. O.	Sept. 2	3	3	0.20	Sept. 23	0.485	++
A. K. B.	Sept. 4	2	0	0.10 (weak)	Sept. 11	0.015	+
C. H.	Sept. 4	3	2	0.10	Sept. 18	0.175	++

++++ = Entirely relieved
+++ = Great relief
++ = Considerable relief
+ = Some relief
0 = No relief or worse.

The relation of the final results to the number of previous years of treatment is shown by Table II. It is seen that in this particular series (far too small for an accurate analysis) there was no significant variation according to the amount of previous treatment.

Table II.

Relation of Final Results to Number of Years' Treatment.

	Total	++++[1]	+++	++	+	0	?
Treated this year only	49	5	12	7	8	5	12
Treated 1 yr. before	35	1	12	8	3	3	8
Treated 2 yrs. before	18	0	9	4	2	1	2
Treated 3 yrs. before	3	1			2		
Treated 4 yrs. before	3		1				2
Treated 5 yrs. before	1		1				
Treated 7 yrs. before	1	1					
Total	110	8	35	19	15	9	24

[1] See under Table I for symbols.

In this study the relation of the final result to the total dosage:—to the sum of all the individual doses added together and expressed in cubic centimeters of the 1-100 dilution—is very interesting. The results are summarized in Table III.

Table III.

The Relation of the Total Dose to Final Result.

Total Dose as Expressed in Cubic Centimeters of 1-100 Dilution.	++++	+++	++	+	0
Under 0.4 c.c.	1	2	3	4	2
0.41 c.c. to 0.60 c.c.		2	1	4	1
0.61 c.c. to 0.80 c.c.	2	1		2	
0.81 c.c. to 1.00 c.c.	2	3	1		
1.01 c.c. to 1.20 c.c.	1	3	1	1	
1.21 c.c. to 1.50 c.c.		7	1	1	2
1.51 c.c. to 2.00 c.c.	1	8	7	1	2
2.01 c.c. to 2.50 c.c.		3	2	1	2
Above 2.50 c.c.	1	10	2	1	2

Figures represent the number of patients.

[1] See under Table I for symbols.

It is curious, especially in its bearing on the immunology of hay fever, that patients with the largest dosage were not the patients who did the best. Of the eight patients who were entirely relieved of their hay fever, five of them were given a total dose throughout the season of not over 1.0 c.c. of the 1-100 dilution, or 0.2 mgms. of nitrogen. Furthermore, out of 11 patients who received absolutely no benefit from the treatment, eight received a total dose greater than 1.2 c.c. On the whole, doses between 0.6 c.c. and 1.5 c.c. seemed to be the most successful. This observation, if true, is, of course, important in its bearing on the mechanism and immunology of hay fever.

The relation of the end results to the dates of first treatments; to the intervals between treatments; and finally to the dates of final treatments are, in this series, not clear cut and are not worthy of tabulation. In general terms, however, there is little question but that those patients did better whose treatment was prolonged well into the ragweed season. The theoretically automatic maintenance of desensitization by the absorption of pollen through the mucous membranes is not here entirely justified by experience. Several patients whose anteseason treatment led to their ultimate tolerance for large subcutaneous doses (1 c.c. of 1-100) of ragweed extract, had hay fever symptoms afterward which were promptly relieved by one or two small doses (0.1 c.c. of 1-1000).

REACTIONS.

Very important features of this study are the general systemic reactions which may follow immediately any injection of a specific protein into individuals susceptible to that protein. Of 91 patients who were each given an average of about eight injections, in other words, a total of 728 injections, there were systemic reactions, noticed by both patient and doctor, occurring in 14 instances in seven patients. It is perhaps worth while to consider these patients in some detail, not only from the point of view of the cause of the reaction, but also from that of the ultimate effect upon the disease. The cases with reactions are therefore summarized here below:

The first patient (H. R.) was a woman of 21, who had had hay fever for only two seasons. She had had four doses of the dilute solution and two doses of the stronger solution, the last being 0.15 c.c. In order to compensate for her vacation, it was decided to give her several doses at shorter intervals. Consequently in three days after the dose of 0.15 c.c. of 1-100 on August 26, she was given twice this dose. This caused, within half an hour, a mild attack of asthma, with severe hay fever and considerable redness around her face and neck. Five days later she was given 0.4 c.c. and again had a reaction. It was hoped that the first reaction had rendered her "anti-anaphylactic." About 18 days after the first reaction, she (having returned from her vacation) was given 0.05 c.c. (only one-third of the dose causing the first reaction) and again she had a mild reaction. It seems likely that the reactions were due to excessive doses and that during the two weeks' vacation she had become again violently sensitive. Her letter in November reports "only slight improvement" and her rating was put down as (+).

The second patient (J. J.), a woman of 39, had had hay fever for 16 years. She had received seven doses of the dilute ragweed extract and one dose of the strong (0.05 c.c.). A week later this last dose was doubled and she had a reaction. Four days afterwards, 0.1 c.c. was repeated and again she had a reaction. In two weeks she was given 0.15 c.c., and had a reaction; a week after that only 0.05 c.c., but still she had a mild reaction. In no case was her reaction severe. Her letter reports, "Hay fever was better than in other years," but she is rated as only (+).

The third patient (C. H.) was a woman of 30, who had had hay fever, rose cold, asthma, together with susceptibility to eggs and horses, since the age of eight. Her treatment progressed without incident until on August 12 she was given 0.05 c.c. of the strong ragweed (1-100). Her previous dose, on August 5, had been 0.6 c.c. of the 1-1000, so that she received in the treatment a dose less—in terms of total nitrogen—than the week previously. Her reaction was very slight and did not come on until about an hour after treatment. After this she took doses of the strong (1-100) dilution at four-day intervals leading up to 0.4 c.c. with no trouble. Four days after this dose of 0.4 c.c., she had 0.5 c.c., which caused a definite reaction with asthma and urticaria appearing in about half an hour. Her letter in November reports, "Asthma was not bad; the contrast with last September is blessedly great." She was rated as (+++).

The fourth patient (A. J. M.) a woman of thirty, had had hay fever since the age of ten. Having had three doses of the dilute ragweed extract, she was given, on August first, 0.05 c.c. of the 1-100 strength. This, in terms of nitrogen content, was twice the dose which she had received the week previously. Four days after this dose, she was given 0.15 c.c. and had a definite reaction. Further treatment was uneventful although the doses were never increased above 0.15 c.c. She is rated (+++).

The fifth patient (F. W. R.), a woman of 53, had had hay fever since the age of 20. She did not present herself for treatment until August 28, at which time she had been having hay fever for nearly two weeks. She was given on this day 0.05 c.c. of the 1-1000 dilution and a week later she was given 0.20 c.c. Four days after this second dose, she was given 0.25 c.c. and in about half an hour had a severe aggravation of her hay fever with slight urticaria and a very transient and mild attack of asthma. The reaction in her case is very interesting because of the very slight increase in dosage which was given four days after the previous dose. She is also interesting in that after recovery from this reaction, she had no further hay fever and thus, in her case, treatment begun in the presence of symptoms was of the greatest success (except for the slight reaction) and she was rated as (++++).

The sixth case (J. C. P.), a man of 48, had had hay fever for twenty years with treatment for four years, always with excellent results. He tolerated ragweed extract very well and on July 31 received 0.3 c.c. of the 1-100 dilution —his fifth dose—without any symptoms and with very slight, transient, local reactions in his arm. Nine days later he was given 1.00 c.c. of the same strength and in fifteen minutes had a severe attack of general urticaria and asthma which lasted for over an hour, being relieved and abbreviated by a subcutaneous dose of adrenalin. The final dose in this case was slightly more than three times the dose given nine days previously, but the dose had been trebled on two occasions before that with about the same time interval and without any symptoms. As in previous years the total result of treatment was good and he was rated as (+++).

The seventh patient (E. E.), a woman of 27, had had hay fever since the age of 12. Her treatment was begun on July 11 and, on her own assurance that she could take large doses, she was given 0.05 c.c. of the strong (1-100) dilution of ragweed. She at once had a reaction which lasted for two hours, although the symptoms were never of great severity. This same patient was then treated with much smaller doses until, on August 12, she was given another dose of 0.05 c.c. of 1-1000, which she took without any symptoms. On August 15, the previous local reaction having been very slight, she was given 0.2 c.c. of the strong dilution and again had a reaction which, this time, was of somewhat greater severity, although of shorter duration. Treatment in her case was very unsatisfactory and seemed in no way to modify her symptoms in spite of the fact that the doses were later reduced to 0.25 c.c. of the 1-1000. She is rated as a failure (0).

In this series reactions incidental to the treatment of hay fever occurred in 14 instances in 728 injections, or 1.9%. Most of the reactions seemed to follow a rapid increase in the dose after a relatively short interval. However, this was not always the case, as in several instances reactions followed only a comparatively slight increase in the dose. The fact that a second reaction can occur within a four-day period following the original reaction demonstrates well the fact mentioned in a previous paper[3] that the well-known principles of anti-anaphylaxis, as seen typically in guinea-pigs, do not hold good in man. This brings us to a discussion of the mechanism of hay fever and of the treatment.

DISCUSSION.

In considering the mechanism of hay fever, three facts present themselves:

First. Ragweed pollen produces an immediate local reaction when in contact with skin and mucous membrane of hay fever patients.

Second. Subcutaneous injections of an extract of this same pollen may produce severe symptoms typical of anaphylaxis which appear in a matter of minutes.

Third. Treatment with ragweed extract causes, in most cases, a relief of symptoms.

These same three facts hold good for diphtheria toxin in individuals who have no antitoxin, but there are these differences:

The local reaction (Schick test) is not immediate but appears only after several hours.

The symptoms caused by an overdose (in animals) are not the same as the symptoms of anaphylaxis.

Treatment with toxin results in the formation of antitoxin and consequent immunity (although perhaps only temporary immunity).

An antitoxin to ragweed pollen (toxin) was claimed to exist by Dunbar,[10] but his "pollantin" has since been shown to have no greater therapeutic effect than normal serum.

In preliminary experiments the author failed to demonstrate antitoxin for ragweed pollen in the blood serum of patients who were "doing well," who were "doing badly," who had recently (one hour) had a reaction or in normal individuals. The method used was to mix a relatively large amount of either fresh or inactivated serum with a relatively small amount of ragweed pollen in a test tube which was then incubated at 36° C. for one hour. Dilutions of the mixture were made with saline and tested for ragweed extract in the skin of susceptible patients. In no case did the treatment of ragweed extract with hay fever or normal serum delay or prevent the development of an intradermal reaction quite as large as the control injection containing the same dilution and amount of ragweed extract but without serum.

The mechanism of hay fever bears a close relation to the mechanism of artificial active anaphylaxis: Local and general reactions are common to each, and proper treatment with the antigen will abolish sensitiveness and bring about anti-anaphylaxis as originally shown by Besredka.[11] In active anaphylaxis, however, the presence of circulating antibodies is one of the striking features, whereas in ragweed hay fever the presence of circulating antibodies is vague and doubtful. Although they may be present in certain cases, they are by no means constant. Indeed Koessler[12] and also Clowes[13] find that circulating antibodies decrease rather than increase as the process of "immunity" progresses.

Although search of the literature has failed to yield other evidence than reactions of skin and mucous membranes, we may assume that there is some substance in the cells of these individuals which either combines with the pollen extract to form a poison in the sense of Vaughan's specific ferment or which by its absence fails to render the poison of the pollen harmless. Thus, from our present knowledge, it seems likely that the whole process is a strictly cellular affair.

The systemic reactions obtained in treatment show that the tolerance or immunity is low; that as suggested by Dr. Goodale,[14] the total capacity of the body for ragweed pollen extract is nearly filled and can easily be made to overflow.

Inasmuch as the active sensitization of guinea pigs to ragweed pollen extract is apparently impossible (Cooke, Flood, and Coca)[15]: as attempts to transfer antibodies from man to animals as well as the demonstration of circulating antibodies to ragweed in a test tube is at best very variable, and as the principles of anti-anaphylaxis do not apply, it seems hardly correct to class hay fever with the typical anaphylaxis seen in the artificial sensitization of animals and man.

Idiosyncrasy to drugs, such as quinine[16] and aspirin, is recognized and, as Cooke[17] indirectly suggests, hay fever as a manifestation of a similar idiosyncrasy to ragweed may belong in this group and have nothing to do with anaphylaxis.

SUMMARY.

First, the results of treating ninety-one cases of fall (ragweed) hay fever are as follows:

Nearly 9% of patients are entirely freed of their symptoms; another 62% are considerably relieved. Of the remaining 28%, about one-third showed no relief at all. These results were determined by a personal communication to each patient four to six weeks after the ragweed season. Because this final report was unobtained, nineteen other cases are not included here.

Second, the best results are apparently obtained with a moderate amount of specific treatment since in these cases even after considerable preparation the tolerance for ragweed pollen extract still remains at a very low level.

Third, systemic reactions occur after 2% of individual injections and are not always due to an overdose.

Fourth, in view of the fact that so few of the postulates of experimental anaphylaxis hold good for hay fever, it is probable that hay fever depends upon a mechanism which is not "anaphylactic" but which is perhaps closely associated with that of drug idiosyncrasies.

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REFERENCES.

[1] R. P. Wodehouse: Preparation of Vegetable Food Proteins for Anaphylactic Tests. Boston Medical and Surgical Journal, 1916, Vol. clxxv, p. 195.

[2] R. A. Cooke and A. Vander Veer, Jr.: Human Sensitization. Jour. of Immun., 1916, Vol. i, p. 201.

[3] F. M. Rackemann: A Clinical Study of 150 Cases of Bronchial Asthma. Archives of Internal Medicine, 1918, xxii, 517.

[4] G. H. A. Clowes: Treatment of Hay Fever by Vaccination with Certain Plant Pollens. Johns Hopkins Hosp. Bull., 1916, Vol. xxix, p. 87.

[5] R. A. Cooke and A. Vander Veer, Jr.: Human Sensitization, Jour. of Immun., 1916, Vol. i, p. 201.

[6] K. K. Koessler: The Specific Treatment of Hay Fever (Pollen Disease). Forchheimer's Therapeusis of Internal Diseases, 1914, Vol. v, p. 671.

[7] Solomon, Strauss, and Frank: Pollen Extracts and Vaccines in Hay Fever. Jour. A. M. A., 1916, Vol. lxvi, p. 712.

[8] M. C. Terry: Precision Syringes. Jour. Infect. Dis., 1913, Vol. xiii, p. 80.

[9] F. M. Rackemann: Interesting Reactions Incidental to the Treatment of Two Cases of Bronchial Asthma. Jour. A. M. A., 1917. Vol. lxix, pp. 889, 890.

[10] Dunbar: Etiology and Specific Therapy of Hay Fever. Berl. klin. Woch., 1905, Vol. xlii, p. 942.

[11] Besredka in Kraus u. Levaditi Handbuch, etc., Ergänzungsband, Vol. i, p. 246.

[12] K. K. Koessler: The Specific Treatment of Hay Fever, (Pollen Disease). Forchheimer's Therapeusis of Internal Diseases, 1914, Vol. v, p. 671.

[13] G. H. A. Clowes: Certain Specific Reactions Exhibited by Hay Fever Cases. Proc. Soc. Exper. Biol. and Med., 1913, Vol. x, p. 69.

[14] Personal communication.

[15] R. A. Cooke, E. P. Flood, and A. F. Coca: Hay Fever, The Nature of the Process and of the Mechanism of the Alleviating Effect of Specific Treatment. Jour. of Immun., 1917, Vol. ii, p. 217.

[16] J. J. O'Malley and W. G. Rickey: Arch. Int. Med., 1919, Vol. xxiv, p. 378.

[17] R. A. Cooke: Allergy in Drug Idiosyncrasy. Jour. A. M. A., 1919, Vol. lxxiii, 759.

Clinical Department.

A CASE OF TUMOR OF THE SACRUM.

By Joel E. Goldthwait, M.D., Boston.

The two cases of sacral tumors reported by Dr. F. B. Lund in the December 18, 1919, number of the Boston Medical and Surgical Journal, suggest the report of the following case as contributing something to the knowledge of such conditions.

The patient, a married woman, 44 years of age, was referred to me in November, 1909, by Dr. Maurice H. Richardson who sent with her a letter, an extract of which is here printed.

"She was operated upon by a friend of mine, Dr. Giles, of Hanover, N. H. Dr. Giles some years ago did a ventral fixation. It was thought at that time that she had some malignant disease of the liver. I studied her case carefully and then operated, finding that the ventral fixation had become separated and that there were gall-stones. I removed the gall-stones and fixed up the uterus. In the hollow of the sacrum there was a mass which I supposed to be inflammatory before operation. Inside the abdomen I found a firm mass connected with the sacrum, sessile, broad and evidently containing fluid. We thought at the time that this might be due to caries of the sacrum. She has done very well indeed since the operation. She is the picture of health. The mass in the hollow of the sacrum is distinctly smaller but on the posterior surface of the sacrum there is, as you will see, a prominence which confirms the diagnosis of caries of a benign origin."

The patient was referred because of weakness and pain with swelling over the sacral region. At that time she gave the history not only of the operations reported in Dr. Richardson's note, but that she had a very difficult childbirth nine years before, following which there was marked increase in the weakness of the back which had been present before but which had been distinctly weaker ever since.

At the time of my first examination there was a marked prominence of the upper part of the sacrum, giving the impression at first of a distinct spondylolisthesis, but on more careful investigation it was evident that the whole spine had not been displaced forward as it is in a spondylolisthesis, but that much of the appearance which this suggested was due to the swelling over the sacrum with, at the same time, considerable forward inclination of the pelvis. The spinal motions were moderately limited but not more than would be expected as a part of the slight strain which must result from the imperfect posture. The straight leg raising was moderately limited, suggesting a moderate strain of the sacro-iliac joints, as would also be expected from the forward inclination of the pelvis. There was no evidence of paralysis or involvement in any way of the nerve roots or trunks supplying the region below the site of the tumor. Examination by rectum at that time showed a hard mass covering the whole anterior part of the sacrum and projecting an inch to an inch and a half into the pelvis. The swelling over the posterior part of the sacrum was not hard and did not obscure the general bony landmarks. At that time an x-ray was taken which showed the destruction of a large part of the central portion of the sacrum. In the light of the history of an evidently long continued condition with such extremely good general function, it being possible for the patient to be able to walk about with apparent ease, it was considered inadvisable to operate, and a support for the pelvis was planned to relieve the joints of the pelvis from the strain, and planned also to correct the unnatural forward inclination of the pelvis. This support was applied.

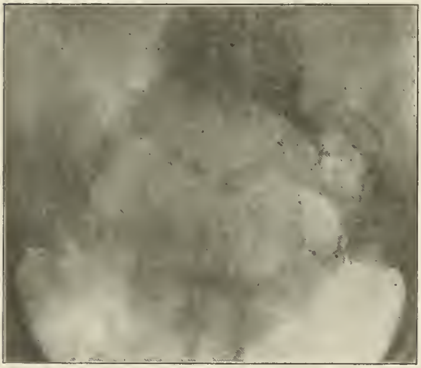

Fig. 1.

The patient has been seen at irregular intervals since, the last note having been made on March 28, 1917, just before I left for service overseas. In that time, the patient had been able all of the time to carry on a drug store business in her town, she being a widow and the support of the family dependent on her. She tired more easily than would be normal but with two or three short periods of rest in the course of a day together with a belt to give reasonable support about the pelvis and low back, it has been possible for her to keep about with apparently no increase of the difficulty and on the whole increasing general strength.

The x-ray shown here was taken in January of 1916 and of itself would naturally cause much greater alarm regarding the patient's well being than would be justified from the functional usefulness which is present.

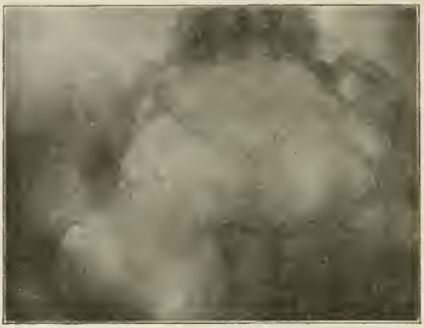

Fig. 2.

The case is reported simply to show that tumors of the sacrum many times are relatively benign and with conservative treatment it is possible for the patients to be reasonably relieved without subjecting them to the risk of operation.

Book Review.

Principles and Practise of Roentgenological Technique. By I. Seth Hirsch, M.D., Director X-ray Departments, Bellevue, Fordham, Harlem, and Gouverneur Hospitals, New York City. New York: American X-Ray Publishing Co. 1920.

A book on technique written by so distinguished an author as Dr. Hirsch deserves more than passing interest. In this work the profession gains the benefit of the broad experience of a large hospital clinic. The first part of the book is devoted to laying the foundation for proper technique by a detailed explanation of the physics of the X-ray. Although this part of the work is thorough, the writer has been successful in avoiding ultra-scientific terminology, with the result that it is unusually readable and, therefore, instructive. The chapter devoted to standard positions is unique in that the text is illustrated by photographs both of the position and the resulting x-ray appearance. The fact that there are nearly one hundred more illustrations than pages in the book is a point to be commended. Throughout the work there is a wealth of practical information that would require much time to obtain from other sources. For example, the chapter on developing contains, besides the actual technique, a number of practical points not usually included in a book of this kind. The chapter on exposure is particularly complete, giving tables covering practically all possible variations of spark gap, milliamperage, distance, and thickness of the part to be radiographed.

Although in the preface the author has stated his aim—"to pack the kit of the student of roentgenology with those principles of technique which will serve him best on the difficult road to the goal—roentgenological diagnosis and therapy"—he has succeeded also in producing a work that will be a useful reference book for any practitioner of roentgenology.

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ECONOMY IN PUBLIC HEALTH ADMINISTRATION.

The American people want good health and are willing to pay for it but they should demand that they get a just return for the money expended for this purpose. The increasing popularity of the health campaign has brought with it a host of agencies which are eager to do their part. On the surface this looks very well but a more careful study of the situation shows much lack of coöperation and frequently much duplication. There is also wastage of funds in unnecessary overhead charges. This exists in the national government as well as the state governments and the administration of the smaller political units.

The national government maintains three medical services, each one grasping for the popular public health administration. The Army for some unknown reason still administers the sanitation of the Canal Zone, while the Navy does the same for the Virgin Islands, and the Public Health Service is continually reaching out for fresh fields. Each of these services maintains a medical school in the city of Washington to which is attached in each case an elaborate laboratory and library.

The principles of preventive medicine are the same no matter what uniform the person has on, but there are probably some points of administration and possibly a few special features that are confined to one service and are not of value in the others. These could easily be provided for without the maintenance of three schools. The best interests of the people demand that there be a combination or consolidation of the laboratories and the medical schools of the three services. The time will come when there will be an actual consolidation of the three services.

These are not the only federal agencies that are working in the health campaign. We find that for some unknown reason there is in the Department of Labor a Children's Bureau, which deals entirely with child hygiene. At the same time the Department of Education is also running a child hygiene bureau which to the outsider seems to be run in opposition to the Children's Bureau.

The Department of Agriculture and the Bureau of Mines are also engaged in public health activities.

The conditions among the states are similar to what is found in the national government. Probably most of the state agencies are doing good work, but without coördination and proper direction the maximum of efficiency is not secured

One of the large eastern states has gone to the limit in inefficient health organization. This state has a well organized health department which is administered by a man of great ability who has a world-wide reputation. In addition we find that the State Department of Education is supervising the medical inspection of the school children, which is distinctly a health matter. Incidentally it would seem to him who has to do business with the Chief Medical Inspector that he is very jealous of the State Department of Health. The Industrial Commission has supervision of all matters relating to the sanitation of factories and mercantile establishments. These are purely health matters which should be administered by the Department of Health. The Department of Agriculture has jurisdiction over the milk supply as far as adulterations go, and another bureau has supervision over the cold storage of foods. The Department of Agriculture is run in the interest of the farmer and it hardly seems wise to trust the enforcements of measures for the protection of the consumer to the producer and his friends.

The Bureau of Narcotic Drug Control has to do with the illegal use of narcotics, and also maintains clinics where drug addicts may receive treatment. This is also a public health function and its administration should be in the Department of Health.

For political reasons the state maintains a quarantine at the port of entry There is no need for this and this work should be transferred to the federal government without further bickering.

The state intrusts its insane to the care of a commission which is more interested in treatment than in prevention. This should be a function of the Health Department.

Besides the above major "Health Departments" this state maintains a tuberculosis hospital which is administered by a commission, an institute for the study of cancer, administered by a board of trustees, and several other smaller commissions which, although doing good work, are not sufficiently closely related to the administration of the Department of Health to be of the maximum good to the state.

The funds available for public health work are none too plentiful and they should not be squandered in useless overhead charges, nor should the state maintain two offices where one can do the work.

All measures for the prevention of disease or the treatment of disease should be administered by the Department of Health. In addition the governors of the several states should see that there is the proper coöperation between the various bureaus of the state administration so that there will be no duplication.

MEDICAL TREATMENT OF DISABLED SOLDIERS AND SAILORS.

It may not be known by all who might avail themselves of treatment by the Government, that under Public Act 326 the United States Public Health Service agrees to furnish relief to any honorably discharged soldier, sailor or marine, or Army or Navy nurse, male or female, who was discharged on or after October 6, 1917, and becomes disabled or ill on account of illness or injury incurred previous to discharge from service, and not due to misconduct. Physicians throughout the country should know the Government's position in this matter, as it is stated in a pamphlet recently issued, "Relief to Disabled Men through the United States Public Health Service."

By applying to the Commanding Officer of an Army hospital, those who come under the act may enter the institution; or by applying to a Public Health Service official, they may enter a Public Health Service hospital. In both cases accepted applicants will have all proper expenses paid; but unless authority is obtained from one of these officials, the Government will not pay for medical treatment. Public Health Service hospitals are located in a number of cities throughout the country.

Lieutenant Colonel Mathew C. Smith of the General Staff, who is in charge of the employment and the general welfare of ex-service men, has said:

"Although the welfare bodies and others have been coöperating with the War Department in an effort properly to inform all these persons who are entitled to medical or surgical rights, these men incurred their disabilities while in the service of our country, and it is the intention of the Government that they shall not become wards of the public. The coöperation of all medical men is requested in this matter. Physicians and surgeons are notified that former soldiers or sailors suffering from disabilities resulting from war conditions may be directed to the local Red Cross or United States Public Health Service representative, or to the nearest Army hospital."

If discharge or other papers showing that the disability was existing at the time of separation from service are available, they should be presented by the applicant, as they will be of help in making a dicision on the case. If these papers are not available, however, the man should not hesitate to apply. Any applicant, if this condition demands it, will be immediately placed under treatment pending the receipt of the necessary papers.

If there is no representative of the Health Service in the man's home town and no Army hospital at hand, and it is possible for him to travel, such traveling expenses, hospital expenses, and wages lost while undergoing examination will be paid by the Government, should it be decided that treatment is necessary. On the other hand, if the physical condition of the man makes it impossible for him to travel, the Public Health Service will arrange for his examination and treatment at his home. In special cases where it is found that a change of climate will be beneficial patients will be sent by the Public Health Service to specially designated hospitals.

Copies of the pamphlet explaining the law may be secured without charge by any physician on application to the office of the Assistant to the Secretary of War, Service and Information Branch, Council of National Defence Building, Washington, D. C.

TRAINING IN HOME NURSING.

The recent epidemic of influenza has again demonstrated that the nursing service available in most communities is entirely inadequate. Even in the villages there have been thousands of cases of the disease, all in need of nursing care. It is manifest that no community could maintain at all times a sufficient number of professional nurses to meet the demands of a great epidemic.

If we cannot have adequate professional nursing service we must do the next best thing: provide practical training for as many women as possible. The nation is not hesitating to call upon the young men to undergo a period of military training so as to be able to protect the country in case of war. Why not call upon the women to undergo a period of training that will fit them for the duties of home care for the sick? Wars come very infrequently, but the necessity for nursing the sick is always here.

Where shall a woman obtain this instruction? It seems to us that the time has arrived when the system of public instruction must be recognized on a more practical basis in order to equip pupils more thoroughly for their work in the world. When we have such a reorganization, home care of the sick will become a major subject in the course for every girl in the land. This must not be a course learned wholly from books, but must be made practical. We do not expect that every woman will be as efficient as a professional nurse, but it is reasonable to expect that she will know how to take the temperature, observe symptoms, prepare food for the sick, and do many of the small things that go to make up efficient nursing.

The community that had adopted such a program a few years ago would have been in a fortunate position during the great epidemic of 1918 and the lesser epidemic through which we are now passing.

MEDICAL NOTES.

Memorial for Lord Lister.—It has been announced that plans are now being made by the government to establish a memorial to Lord Lister in Edinburgh. It has been decided by the University and the Royal Colleges of Physicians and Surgeons in Edinburgh, under whose control the memorial will be established, to provide an institute for research and teaching in medicine. A site has already been secured and there is being organized a committee, of which Mr. Balfour, chancellor of the university, will be president, to make an appeal to the public for the sum of $1,250,000.

Appointment of Dr. Hugh S. Cummings.—Dr. Hugh S. Cummings, of Hampton, Virginia, is to succeed Dr. Rupert Blue as surgeon general of the Public Health Service. General Blue has served two terms as surgeon general, being appointed for the first time during the administration of President Taft and later by President Wilson. Dr. Blue will remain in the Public Health Service and will devote himself to research work.

Appropriation for the Study of Influenza.—The sum of five hundred thousand dollars has been appropriated by the U. S. Senate to be used by the Public Health Service in combating influenza. Allotments will be made to universities, colleges, and other research institutions by the Public Health Service to promote the investigation of influenza and allied diseases in order to discover their causes and prevent their spread.

Election of Professor Lafayette B. Mendel.—The election of Professor Lafayette B. Mendel, of Yale University, as associate member of the Société Royale des Sciences Médicales et Naturelles of Brussels has been announced.

Appointment of Professor Swale Vincent.—Professor Swale Vincent has received an appointment as professor of physiology in the University of London (Middlesex Hospital) and will take up his duties in London probably at the beginning of May. Professor Vincent has occupied the chair of physiology at the University of Manitoba (Winnipeg) since 1904.

Appointment of Dr. Harold Pringle.—To succeed the late Sir Henry Thompson, Dr. Harold Pringle has been appointed professor of physiology in Trinity College, Dublin. Dr. Pringle was formerly lecturer on histology and assistant in physiology in the University of Edinburgh.

Typhus in Russian Army.—A recent report from Basile Maklakoff, representative of the anti-Bolshevik forces in Paris, discloses the fact that the remaining forces of the army of General Yudenitch are threatened with extermination by typhus. There are left at the present time two thousand officers and eighteen thousand men, and of these there is hardly a man who is not infected with typhus or some other disease.

Dangers of Birth Control.— In a recent address before the Montreal Catholic Women's League in Montreal, Dr. W. A. L. Styles is reported to have expressed the belief that the American race in the United States is threatened with extinction within the next century and a half if the doctrine of birth control continues in its present ascendency. He stated that the number of American children under the age of five, per thousand women of childbearing age, in the United States has decreased fifty per cent. in the last century, and that immigration and the birth rate of the foreign population has kept the birth rate higher than the death rate.

Typhoid in Galicia.—The American Red Cross has been asked by the Polish Government to aid in checking the epidemic of typhoid fever, which is spreading throughout Southeastern Galicia, by sending doctors to that district. It is reported that in Eastern Galicia the people are dying out by whole villages, there being several in which there is now no living inhabitant. Since the beginning of the epidemic, there have been one hundred thousand deaths, one-fifth of the number who have been ill with the disease. At Tarnopol there is a daily death roll of one hundred at hospitals, while at Stanislau hospitals are so crowded that many sufferers can be given no attention.

BOSTON AND MASSACHUSETTS.

The New England Deaconess Association.—The Cullis Home in Roxbury has come under the control of the New England Deaconess Association, and will be used exclusively for the care of persons afflicted with cancer and other incurable diseases. The Association hopes eventually to build a large hospital for the treatment of such sufferers. The institution will be the first of its kind in the state under Protestant auspices. At present there are in Boston only twenty-four beds under Protestant management which may be occupied by patients suffering from cancer whose cases are beyond cure, and none of these is for men. There will be no restrictions placed on nationality or religion as a requirement for admission to the home. More than one million dollars will be needed to carry on the work of the institution; it is hoped that this sum will be raised by subscription. The New England Deaconess Hospital in Boston is obliged to refuse admission to approximately two thousand patients annually because of its limited accommodations, and the need for the care of these incurable cases is becoming increasingly great.

Influenza in Boston and Massachusetts.—Recent reports from Boston and throughout Massachusetts show a steady decline in the number of new influenza cases. On February 19 there were reported to the State Department of Health 868 cases, including 124 in Boston.

Worcester reported 61 cases; New Bedford, 56; Lowell, 49; Easthampton, 29; Clinton, 28; and Lawrence, 26. On February 20, there were reported only 650 influenza cases in Massachusetts; of these, 74 occurred in Boston, where there were also nine new cases of pneumonia and six deaths. Other cities made the following reports: Lowell, 77; Haverhill, 66; Worcester, 36; Cambridge, 30; Saugus, 30; New Bedford, 29; Fall River, 27.

Reports received for February 21 show a further decrease in the number of cases in Boston, but a slight increase in other parts of the state, the totals being 58 for Boston and 646 for the rest of the Commonwealth. Other reports included: Lowell, 47 cases; Lynn, 40; Worcester, 39; Cambridge, 34; Clinton, 31; Plymouth, 28; Spencer, 26; New Bedford, 25; and Templeton, 25. During the week ending February 21 there was a total number of 760 cases of influenza in Boston, a decrease of 1353 from the number during the preceding week. There were 106 deaths from influenza in Boston, a decrease of 33 from the week before, and there were 110 deaths from pneumonia.

The Massachusetts Medical Society.

COMMITTEE ON PUBLIC HEALTH. PROMOTION OF MASSACHUSETTS CENTRAL HEALTH COUNCIL.

With a view to the promotion of public health in the State, the Public Health Committee of the Massachusetts Medical Society extended an invitation to representatives of twenty organizations interested in public health to meet at the Boston Medical Library on May 2, 1919, for the purpose of considering "ways or means whereby those activities in public interest, called into being by the war, may be perpetuated, and a closer relationship be brought about among all agencies, private and public, which exist for the promotion of public welfare in the Commonwealth."

At the meeting on that date, at which eighteen representatives of such organization were present, it was unanimously voted: "That the meeting endorse the idea of a federation of welfare agencies and that the Public Health Committee of the Massachusetts Medical Society take measures to secure the formulation of plans to bring about such a federation."

As a definite step to this end it was voted that a committee of seven be appointed by the Chair to consider the matter and report to the organizations represented at the meeting. The committee appointed consisted of Dr. Walter P. Bowers, chairman; Dr. Eugene R. Kelley, Miss Mary Beard, Mr. Robert V. Spencer, Mr. William A. L. Brazeley, Dr. George W. Kline and Mr. C. C. Carsteins.

From various causes, definite action by this Committee has been delayed, but finally on January 30, 1920, it formulated the specific recommendations which are to be found in substance in the enclosed transcript of the proceedings of the Committee meeting on that date.

It is to be noted among other recommendations the Committee states that: "There should be immediately called into existence a central health council to be composed of the executive heads of all organizations in Massachusetts doing state-wide work which are interested in public health."

For the purpose of giving interested organizations an opportunity to hear the report of this Committee and to organize a central health council or to take any other action which they may deem advisable, the Public Health Committee of the Massachusetts Medical Society has arranged to have placed at the disposal of representatives of interested organizations a room and stenographer at the Medical Library (Sprague Hall) 8 The Fenway, at 3 P.M., on March 18, 1920.

You are therefore requested to see that representatives of organizations with which you are connected or in which you are interested are present at the time and place stated, and it is suggested that such representatives be the chief executive officers and one other representative of your organization, and that they be vested with any necessary authority to take part in the formation of a Central Health Council as recommended.

Yours sincerely,

Annie Lee Hamilton,

Secretary.

MINUTES OF SESSION OF COMMITTEE OF SEVEN ON COÖRDINATION OF PUBLIC HEALTH AGENCIES OF MASSACHUSETTS.

The Committee of Seven appointed by the Committee on Public Health of the Massachusetts Medical Society for the purpose of considering the possibility of bringing about a better coördination, or a federation, of public health agencies of the State, met at the call of the Chairman, Dr. Walter P. Bowers, in Room 143, State House, Friday, January 30, at 11 o'clock. Besides the Chairman, the following gentlemen were present: Drs. Geo. W. Kline, and Eugene R. Kelley, Messrs. C. C. Carsteins, William A. L. Brazeley, and Robert V. Spencer. Mr. Spencer was appointed secretary of the meeting.

After a somewhat extended discussion concerning the history of efforts in other parts of the country for the coördination of public health and welfare agencies and the possibilities for the success of such an effort in the State of Massachusetts, the following report was recommended as representing a unanimous consensus of opinion of those present:

1. There should be immediately called into existence a central health council to be composed of the executive heads of all organizations in Massachusetts doing state-wide work which are interested in public health; the council to be composed of the executive heads of such bodies and one other member from each society. It was suggested that several agencies in addition to those which are invited to participate in the first conference called, including the Massachusetts Dental Society, be invited to representation on the council.

2. Your Committee believes that this council should have for one of its functions joint action regarding health legislation brought forward each year and recommends that the council be formed and sit as soon as possible for the consideration of health legislation which has been introduced for consideration by the present session of our General Court.

3. It also believes that such a council should immediately begin a study of the different successful and unsuccessful attempts at coördination of public health agencies which have been undertaken in other parts of the country and from this study formulate a workable plan for Massachusetts.

4. We further recommend that all state-wide organizations interested in public health be invited to present their programs before this general council in order that any gaps or overlapping in the field of public health work throughout the state may be eliminated.

The Committee, having decided upon the above report, adjourned.

(Signed) Robert V. Spencer,
Secretary of the Meeting.

Approved:
W. P. Bowers, *Chairman.*

Correspondence.

CONTROL OF NARCOTIC DRUG ADDICTION.

117 West 76th Street, New York, N. Y.

Mr. Editor:

The *Weekly Bulletin* of the New York Department of Health of February seventh gives at length, under the heading "Interesting Decision on Treatment of Drug Addiction," an opinion of the Supreme Judicial Court of Massachusetts Commonwealth *vs.* Noble, 230 Mass. Report 83. The New York Department of Heath is vitally interested in this subject as it is extensively engaged at the present time in the treatment of drug addiction.

Under the narcotic drug law of New York, anyone using opium or its derivatives for a period of 30 days is adjudged to be a "drug addict." All such persons have to be registered with the New York City Department of Health if residing in the City of New York. If the addict cannot register in person by furnishing his photograph and the pedigree required to obtain a card of registration, an exemption must be obtained from the Second Deputy Commissioner of Narcotic Drugs. This exemption holds good for 30 days, when it has to be renewed. It has to be procured by the representative of the addict on the sworn testimony of a physician. This testimony covers matters which would be excluded on the ground of personal privilege in any court of law in New York State. Although the New York Legislature repeatedly refused to incorporate measures of this character in the law as drawn, these results have been achieved, first, by a ruling of the Commission of Narcotic Drugs defining a drug addict as above described, and, second, by an amendment of the Sanitary Code of New York City classifying drug addiction as a "pestilential disease" on the authority of the Corporation Counsel. Registration, it may be stated, applies only to New York City. Nowhere else in the State is drug addiction classified as a pestilential disease.

Inasmuch as the whole "drug problem" or, as it is called by some, the "drug promotion," had its origin in this city, the present situation may be described as one of those instances in which "chickens come home to roost."

The first drug law passed in this State was known as the Boylan Law. This law prohibited the prescribing of opium and its derivatives except for disease, injury, or disability. The first arrest under this law was for prescribing for a drug addict. This case is known as the Hoyt Case. Under the law, the accused would have been convicted but for the fact that it was proved to the satisfaction of the jury by

Dr. Ernest S. Bishop of this city that drug addiction was a disease and as such could be prescribed for legally by any physician. This decision shattered the plans of the drug reformers led by the self-proclaimed "Father of the Drug Laws," Mr. Charles B. Towns of this city, who aimed to reclaim the victims of what was called the "drug habit" by custodial care, either institutional or state.

Although the Harrison Law did not accept this formula, the rulings laid down under it by the Commissioner of Internal Revenue surrounded the prescribing of opium by the physician with so many dangers and restrictions that many physicians refused to prescribe it, not only in cases of addiction, but for any purpose whatever. The results of this action were immediate and disastrous. The mortality from suicide and from withdrawal complications became so great that Internal Revenue Agents all over the country requested, and in many instances urged, physicians to take care of these cases until these rulings could be reversed, as they were in time. The Supreme Court of the United States has decided since then that morphine could only be prescribed in the case of an addict for immediate use and not in any fashion to make the addict "comfortable."

The literal application of these principles of law to the treatment of drug addiction by the Internal Revenue Department led to another period of disaster among the victims of this condition. This was ended, according to the accounts printed in the newspapers, by the pleadings, directly addressed to the government, of innumerable sufferers from chronic and incurable disease, as well as from the aged and incurable victims of drug addiction itself.

The evidence of the State's experts in the Massachusetts case refutes the contention that immediate withdrawal of the drug of addiction may result in death. This fact was attested to by Dr. Alex. Lambert as within his own experience, before the Whitney Investigating Committee in this city. Neither was any consideration given by the State to the fact that the prescribing of narcotic drugs by a physician whose acts may appear to be disreputable is vastly to be preferred to such means of obtaining drugs as it has replaced. A newspaper woman before the New York Legislature testified that during one of the periods when doctors refused to prescribe drugs owing to the raids of the police, she was forced to obtain the needed drug under conditions of vilest degradation in criminal resorts in this city. Among those who heard this testimony were several judges by whom she had been sentenced at various times for drug addiction.

Admitting that the indiscriminate use of narcotic drugs is a great and growing evil, no effort has been made by federal or state governments to place the control of this situation in medical hands except under regulations based upon the theories of the original promoters of drug laws with a view to the exploitation of the victims of drug addiction. These promoters have since been discredited by physicians who fought their later measures and defeated them in the New York Legislature. Nevertheless, they have been succeeded at the present time by political exploiters of the drug habit, acting under rules and regulations laid down under existing laws in utter disregard of the scientific facts underlying the problem of drug addiction.

At the last session of the House of Delegates of the American Medical Association the address of the President of the Association was given over to a plea for the enactment of further repressive measures to control the narcotic drug situation. The coming session of this body at New Orleans should be devoted to an investigation of the whole subject of narcotic drug legislation. This should be independently conceived and fearlessly carried out.

John P. Davin, M.D.

THE SCARLET FEVER OUTBREAK.

City Hall, West Newton, Mass.,
February 12, 1920.

Mr. Editor:

In studying the statistics of the recent outbreak of scarlet fever, two groups of cases have been very noticeable: Those who have infected others at varying periods after release, and those who have had suppurating ears or discharging noses, which were very refractory to treatment and prolonged the hospital stay excessively.

Both of these groups are very interesting to the health officer—the first because they are the cause of other cases, thus increasing the number, and require an explanation of why they were released so soon; the second because they require many explanations of why they were not released. Both groups also increase the total cost of an outbreak.

Practically all the patients in these two groups have adenoids or enlarged tonsils, or both, a condition which has been observed in other outbreaks in patients showing a similar history.

The history of the first group is usually as follows: They may, or may not, have had complications during the course of the disease, but, in any event, they were clean at the time of release and had been so for several days previous. After returning home they develop a running nose or ear, sometimes in a few days, sometimes not for a few weeks, and a day or two after the appearance of the nasal or aural discharge another case of scarlet fever develops in the family, the number of new cases being limited by the number of non-immunes.

Two questions arise for solution: How long after apparent recovery are these carrier cases potential sources of infection, and what can be done to prevent them from continuing to be such?

It is known that typhoid carriers are potential sources of infection for long periods after apparent recovery and also that there are periods when they seem to be quiescent, only to become active again from some unknown cause.

It seems fair to infer that a person with adenoids or enlarged tonsils who has had scarlet fever may be a potential source of infection for an indefinite period after apparent recovery: that his adenoids and tonsils act as reservoirs of infection and that it only requires an acute catarrhal inflammation, with its increasing mucous discharge, to wash out the infective material and make him an active source of danger.

This hypothesis—and it is no more—seems to offer a possible explanation of the occurrence of many cases of scarlet fever which cannot be explained in any other way, and it would be of value if health officers would record their experiences with similar cases and notice how many apparent carriers who infect others have adenoids or enlarged tonsils.

The natural corrollary is that a person with adenoids or enlarged tonsils should have them removed before being released after scarlet fever.

In the second group of cases the removal of the adenoids and tonsils seems to offer the best hope of a speedy cure and in the few cases in which this has been done the result seems to justify the operation.

In one instance in which the stay in the hospital had been 127 days a marked diminution of the discharge was noted within three days after the removal of the adenoids, and other cases showed similar improvement.

Francis Geo. Curtis, M.D., *Chairman*,
Newton Board of Health.

TREATMENT OF INFLUENZA AND PNEUMONIA.

Somerville, Mass., February 21, 1920.

Mr. Editor:

In view of the prevalence of influenza and pneumonia, I feel that a few suggestions, based on our experiences at the Brooks Cubicle Hospital, may be pertinent.

We are all agreed that the moving of pneumonia patients in the latter stages of the disease is a most dangerous thing, especially in extreme cold weather and in bad traveling. If the patient has been sick for over three or four days and there is any opportunity to treat him, leave him where he is and give him what little chance he may have. We have had some very unfortunate experiences in this matter, several of the patients dying within three or four hours of admission and one case sent at night from another town one of the coldest nights of the winter found dead in the ambulance on its arrival at the hospital.

The importance of fresh air cannot be too strongly emphasized during the acute stage of the disease, but equally important is the limiting of the air supply and warming the room just as soon as the patient's temperature has become normal. For this reason I believe that the cubicle hospital should be operated in conjunction with a closed one so that the patient may be taken into the closed hospital for convalescence.

For the protection of patients paper pneumonia jackets, helmets with hoods should come down over the neck and shoulders, paper blankets for lightness and warmth and plenty of hot water bottles in the bed.

We believe that a great deal of harm has been done by too frequent examinations of the chest and the consequent exposure.

The importance of water and forced feeding cannot be too strongly emphasized. Above all, keep the bowels open. So many of these septic cases develop an intestinal paralysis that this is most important. If this condition obtains, we have found great benefits from Fowler's solution gtt. v every three hours (suggestion of Dr. W. A. Brooks) with enemata of milk and molasses.

Too much stress cannot be laid upon the avoidance of all drugs which reduce the temperature and consequently lower the bodily resistance. Small doses (gr. ii) Dover powder will usually make the patient comfortable and control, to some extent, the cough.

We believe that the early use of digitalis and other so-called heart stimulants is a grave mistake because, in the first place, we feel that they do harm, and, more than all, we feel that we should save all of our resources until needed at or near the crisis. In septic cases with streptococcus infection nothing seems to do as much good as strychnia (gr. 1-30) every three hours.

A full report of the work of the Hospital will be given at the end of the season.

We feel that another year we can do even more good by the use of units of skilled nurses who may be sent to different sections of New England to organize and supervise the nursing situation.

Thomas M. Durell, M.D., *Chief of Staff.*

APPETITE VERSUS THERAPEUTICS.

Mr. Editor:

It is, to me, regrettable that anyone should hold views such as are recorded in the letter published in your issue of February 19, 1920. To many practitioners of medicine of high clinical attainment, no agent is so valuable as alcohol in the treatment of many threatening acute diseases. To bring scientific teaching in to settle this important queston is not desirable because science apart from bedside experience and observation has in reality slight practical value. Today, more than ever, we need good, thoroughly-trained, all-around physicians. No mere laboratory research or findings can make them, and the one-sided, narrow outlook of the specialist has become deplorable in the highest degree. There are men who have followed science closely in medicine, so far as may be, and hold it compatible with the best care of patients. Beyond a limited degree, its teaching is illusory and vain. Ergo, let us review our knowledge and in doing so correct what is faulty and pernicious.

Beverley Robinson, M.D.

ANECDOTES OF BARON LARREY.

Boston, February 18, 1920.

Mr. Editor:

I congratulate the readers of our Journal upon the admirable paper by Dr. Coues giving a sketch of the history of Baron Larrey. The following two items, which come to me from an accredited authority but, so far as I know, have never been published, are of more than usual significance:

A postman handed the Emperor Napoleon a letter just as he and the Empress were driving from the palace. Noticing the postmark of England, unopened, he stamped upon it, showing his intense hatred of its source. Josephine opened it and said, "But see, it is from Jenner. He desires the release of his beloved colonel, who is your prisoner."

"Anything Jenner wants shall be granted. He has been my most faithful assistant in the European campaigns."

From Jenner Larrey had obtained vaccine virus and every French soldier had been protected from smallpox, which had devastated the armies of the Continent.

It is not generally known that Napoleon was an epileptic. He had been under an extraordinary continuous strain in preparation for his last campaign but was confident of the victory of the morrow. He left orders to be called at four in the morning of the battle of Waterloo. That night he was seized with an unusually severe epileptic attack and Baron Larrey allowed him to sleep until six. Who shall say that the destiny of Europe, which hung in the balance was not decided by those fateful two hours?

Permit me to remain,

Yours sincerely,

Henry O. Marcy.

P. S. I consider my copy of Baron Larrey, published in two volumes, among the more precious books of my library.

NOTICES.

Massachusetts General Hospital.—Clinical meeting, Wednesday, March 17, 8.00 p.m., at lower amphitheatre, Out-Patient Department.

Program: Recent Work on the Inorganic Constituents of the Blood, Dr. W. Denis; The Phenolsulphonephthalein Test and the Nitrogen of the Blood in the Diagnosis, Prognosis, and Treatment of Chronic Nephritis, Dr. Reginald Fitz.

Dr. Frederick T. Lord will preside.

Doctors, nurses and medical students cordially invited.

Harvard Medical Society.—Next meeting in the Peter Bent Brigham Hospital Amphitheatre, Tuesday evening, March 16.

Program: Demonstration of cases. Dr. W. R. Sisson, The Effect of Feeding the Thymus Gland; Dr. W. G. Penfield, Contraction Waves in the Normal and Hydronephrotic Ureter. Discussion by Drs. Cannon, Quinby, O'Conor, and Wislocki.

Medical students and physicians are cordially invited to attend.

Elliott C. Cutler, *Secretary.*

The Boston Medical and Surgical Journal

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A CRITICAL DISCUSSION OF CERTAIN PHASES IN THE DEVELOPMENT OF MODERN INFANT FEEDING: THEIR INFLUENCE UPON PRESENT TEACHINGS.

By **Lewis Webb Hill**, M.D., Boston.

The artificial feeding of infants has been, is, and probably will continue to be a much discussed subject. Our opinions regarding it are constantly changing and developing; its literature is assuming enormous proportions, and each year we are learning more and more concerning the fundamental nutritional processes of the infant, upon which all nutritional therapy depends. It is in a constant state of flux; certain ideas are in the foreground for a few years and then gradually recede, leaving, however, their faint or pronounced marks upon the fabric of the whole. The healthy infant has the power, in a large measure, of adapting itself to widely varying artificial diets: this accounts to a great extent for the success that pediatricians in different parts of the world have had, using their own particular methods, which may differ considerably. There is no one way to feed an infant; it is true that he must be fed a food that furnishes enough fuel value; also that he must have a food which he can digest and which contains the proper materials for the growth of his body; but it is possible to meet these demands in a variety of ways. We know, even at the present time, comparatively little about the factors which are concerned in the disturbances of digestion and of nutrition; furthermore, babies fed according to one method are likely to have somewhat different types of disturbance than those fed according to another method; therefore there is plenty of chance for different ways of looking at these disturbances, and for difference in their classification.

Liberality, broadness of vision, and respect for the opinions of others, are essential in medicine; in no branch of medicine are these qualities more essential than in infant feeding. There are many ways of approaching the subject, many viewpoints of value besides the ones which we may ourselves happen to hold, and it is vital in order to have a clear vision of the subject to give heed to the thoughts of every competent observer, to adopt what seems good in his teachings, and to amalgamate it with our own ideas.

Therefore, it should be of value to consider the development of modern infant feeding, the opinions that have been held by the great teachers of the subject, their influence upon those who have followed them, and their relationship to the teachings of the great present day.

Biedert, *Meigs*, and *Rotch* (The Protein Period). Modern infant feeding may be said to have started with Philip Biedert's inaugural dissertation in 1869. Previous to this time but little scientific investigation had been produced in connection with it; the little that was known was almost entirely empirical and the results of artificial feeding were uniformly bad. Biedert's monograph of sixty-four pages is entitled "Investigations concerning the differences between human milk and cow's milk." Previous to his time there were on record many analyses of cow's milk, but few of human, and the figures varied so widely that it was quite certain that but few of them could be correct.

Cow's milk was supposed to contain about five per cent. of casein, human milk four per cent. Biedert started with the central idea that in order to have a rational basis for the artificial feeding of infants it was necessary to know the exact composition of human milk, the baby's natural food, and then to imitate this as closely as possible in the artificial mixture. He showed by many analyses that the amount of casein in human milk was very much less than that in cow's milk, about two per cent., he believed. He also laid especial stress on the fact that cow's milk when treated with acid formed large tough curds, and the human milk formed very small soft curds. This was due, he said, not only to the fact that there was much less casein in human milk than in cow's, but also that the casein was different qualitatively; cow casein was an entirely different substance from human casein. He called all the protein of milk casein, and did not know that lactalbumin was also present; with him "casein" and "protein" are synonymous terms. His two basic conceptions: that the protein of human milk is less than half that of cow's milk and that the proteins are of different quality were fundamentally correct, and were of epoch making importance. We shall find that for many years thought in infant feeding was greatly influenced by them. He thought that the ratio of fat to casein in human milk was as 3.5 to 2.00—that in cow's milk it was as 4 to 5. The more fat there was in relation to the amount of casein present, the more likely was there to be a soft curd: this was the reason that the curd of human milk was soft and small, and the curd of cow's milk was hard and large. Also, he thought that a certain amount of protein was necessary to hold the fat in emulsion and facilitate digestion; thus we see the beginnings of the idea of the importance of the ratio between the food elements.

Beidert wrote many articles after his first one, and in 1880 the first edition of his textbook appeared, going through four editions, the last in 1900. His central idea was the indigestibility of the cow casein, and his methods of feeding were all based on this. He believed that a mixture should be made in which the amount of casein should be reduced considerably below that in human milk (to 1 or 1.50%) and that the ordinary milk and water dilutions then in use did not accomplish this. In order to raise the nutritional value of the food and also to aid in the digestion of the curd, he used dilutions of cream or mixtures of whey and cream. In his cream dilutions there was a ratio of fat to casein as of 2.5 to 1, which he thought was the most favorable one for the proper digestion of the casein. The cream mixture usually had sugar added up to about 5%.

Besides his regular cream dilutions he developed his famous "cream conserve," a thick paste which would keep for a considerable period, and which needed simple dilution with water before using. This was made from casein, butter, milk, and cane sugar, and the salts of milk. When diluted, according to his directions, it contained about 2.50% fat, 4.0% sugar, 1.00% protein, and .20% salts. He recommended this for use only when fresh milk could not be obtained, and was always a vigorous advocate of mixtures made from fresh, clean milk. He attacked especially the various condensed milk mixtures and proprietary foods which had begun to spring up, and insisted that nothing could ever take the place of fresh cow's milk. Most of his writings are concerned with the chemical differences between human milk and cow's milk and the proper mixtures to feed to normal babies.

In the first edition of his textbook there are 377 pages, 321 of which are devoted to these subjects, and only 56 to pathological conditions, nor did he attempt any special classification of digestive disturbances. He believed that most digestive troubles were due to the casein curd, he denied the good of the gruel and milk dilutions in general use, and advised strongly against feeding starch to small babies. The sugar, he thought, was practically harmless and did not recognize any particular type of indigestion caused by it. He found, however, that if too much fat was fed diarrhea resulted in certain babies, and that in these cases the fat might be as much as 50% of the dried stool. He looked at these stools microscopically and mentions the presence of an excess of fat droplets. The condition was, he said, probably due to a duodenal catarrh, which hindered fat absorption. He also described very dry white stools containing an excessive amount of fat, and thought they were due to a lack of bile secretions ("soap stools"). He believed that failure of fat absorption might have considerable importance in causing infantile atrophy, but that in acute disturbances the casein was more important.

Biedert was a scholar, a shrewd observer, a clear writer, and his ideas influenced the trend of thought in infant feeding for twenty years or more.

Developments in America—Influence of Biedert. In 1880, Dr. John Forsyth Meigs of Philadelphia was the most successful and most widely known feeder of infants in America. His methods were largely empirical, but he got better results than had ever before been obtained. About this time he asked his son, Dr. Arthur V. Meigs, to make for him some analysis of condensed milk. This led the younger Meigs to investigate the compositon of breast milk, to which he devoted a great deal of time, being interested in it up to the time of his death in 1911.

Meigs states his fundamental ideas as follows: "There are but two possible methods in endeavoring to reach a conclusion about what is right to feed babies, the one purely empiric; to experiment with various foods until the best is found; and the other by analysis to learn as nearly as possible what human milk is, which we all know to be the most perfect food for infants, and then to make an imitation of it."

In 1882 he made the statement, following much experimental work, that human milk never contained more than 1% of casein, and this statement may be said to be at the bottom of most of his ideas on feeding. This was about half Biedert's figure for the amount of casein present in human milk. Inasmuch as this is the figure for human milk, said Meigs, in artificial feeding more than 1% of casein should never be in the cow's milk mixture offered to the baby. In making a food for babies two matters should be considered; the constituents must be in the same relative proportions as they are in human milk, and they must be in a medium which shall be as human milk is, alkaline. Furthermore, it is a great mistake to keep changing a baby's food in the early months; the baby should be started on a food which shall imitate breast milk and this should be fed to him without change in strength until he is eight or nine months old. He can take as much of it in amount as he desires, however. Meigs gives the following directions for preparing this food: "One quart of whole milk is put into a pot or a high pitcher and allowed to stand three hours; then one pint is poured from this. When the child is to be fed there are taken of this weak cream three tablespoonfuls; of lime water, two tablespoonfuls; of sugar water, three tablespoonfuls. This makes four ounces of food. Sugar water is made by dissolving 18 drachms of lactose in one pint of water. This mixture contains about 4% fat, 7.00% sugar and 1% protein,—according to Meigs an exact imitation of mother's milk. He fed this to babies of all sizes and ages, in all stages of malnutrition. His results in hospital practice were rather disappointing, he says, and a good many of his babies died, but in private practice the results were most gratifying.

In 1885 appeared his little book, "Milk Analysis and Infant Feeding," most of which he devoted to a technical discussion of his methods of milk analysis, and very little to practical feeding.

Meigs summarizes his principles as follows: "The end to be striven for in order that a more general success may be attained in the artificial feeding of infants is to diffuse more widely and to make common property of the knowledge of the small amount of casein in human as compared with cow's milk, and that in addition to the dilution which is necessary to reduce the amount of this constituent, we must use in proper proportions cream, sugar, and lime water."

Meigs' influence was felt all over the country and his ideas were widely followed. He had worked along the same lines as his predecessor, Biedert, but had added to his work in that he came nearer to the actual amount of casein in human milk, and devised a more exact formula to be used in the imitation of the baby's natural food.

About 1887 Dr. Thomas Rotch of Boston began to be interested in infant feeding. He was well acquainted with the literature of the day, and was influenced very largely by the teachings of Biedert. About the time that Meigs was doing his work in Philadelphia, Rotch began to study various infant foods. On his service at the Infants' Hospital the best results were being obtained with condensed milk. This led him to make an analysis of the condensed milk mixtures that were being fed, and he found that most of them contained very close to 1% of casein. From this he argued that 1% of casein was probably the best amount to use, so he turned to Meigs' mixture, and gave it a thorough trial. He soon began to see, however, that it had its limitations.

He said, "We begin to appreciate that the infants' idiosyncrasy was not for any one of the especial combinations usually found in human milk, such as high or low total solids, or in other words a strong or a weak mixture, but that any one of the various constituents, according as it was in high or low percentage, might be the cause of what was represented by the especial idiosyncrasy, and thus we arrived at the conclusion that in a multitude of variations and degrees, the human infant may have an especial idiosyncrasy for a high or low percentage of any one of the foodstuffs or for any combination of them. Resulting from this we deduced that to obtain a successful feeding and nutrition for infants, we must be able to prepare an almost innumerable number of foods, varying in the percentage of any one of their ingredients, and in the combinations of these percentages. Percentage feeding is the variation of the individual food elements so that we can give various babies the percentages of these elements which are adapted to their special digestions."

These were revolutionary ideas and epoch making. Rotch cast down at a blow the teachings of the day, that human milk must be imitated, and the same mixture fed to all babies. To him we owe the birth of the idea of individualization and variation. He looked upon digestive and nutritional disturbances as being caused by elements in the diet rather than by the diet as a whole, and emphasized strongly the necessity of thinking of the food in terms of its elements.

He followed Biedert in the belief that the casein was the cause of more digestive troubles than any other food element, and recommended feeding it in very small amounts to young babies especially—smaller even than Biedert had used. The fat he regarded as secondary to the casein in importance; the sugar he thought least important of all. He devised the gravity cream, and skimmed milk method of modification, which allows of great elasticity in the preparation of milk formulae, and almost any ratio between the various food elements that is desired. He started milk laboratories in 1891 where the food was prepared exactly according to the doctor's prescription and delivered to the home ready for use. He insisted upon the necessity of thinking in percentages, and the physicians knowing as accurately as possible what is in the mixture that is being fed to a baby. He believed that very small variations in the percentage of the elements in the food were of very great significance. He wrote many papers of importance, and for long was regarded as the greatest American authority on infant feeding.

Retrospect of Biedert, Meigs, and Rotch. To Biedert we owe the first really important scientific investigations in infant feeding, and the proving that human milk and cow's milk are very dissimilar in composition, especially as regards their casein content. To Meigs we owe a more accurate analysis of human milk, and the widespread diffusion of his own and of Biedert's ideas in America. To Rotch we owe the great principle of individualization, the new conception that it is not the food as a whole, but its elements that must be considered. Much of the teachings of these men, in the light of our present knowledge, does not seem to be, and is probably not correct, but they may be regarded, however, as three of the great pioneers in infant feeding. Biedert, Meigs, and Rotch devoted most of their time to the study of what to feed to the baby; their classifications of digestive disturbances were quite secondary and relatively unimportant. They did very little regarding the physiological, bacterial, and chemical processes within the baby's body; they studied his food rather than himself. The next four men that we have to discuss,—Widerhofer, Escherich, Czerny, and Finkelstein,—studied the baby primarily and his food secondarily.

Widerhofer, of Vienna, was essentially a pathologist. Viennese medical thought in his day was largely influenced by the studies of Rokitansky, the greatest student of gross pathology. It was the age of anatomic pathology; Rokitansky in Vienna and Virchow in Berlin were the two greatest pathologists in the world, and their influence was felt everywhere. In every branch of medicine changes in anatomic structure, both gross and microscopic, were made the basis of classification. It was natural for students of infant feeding to apply these principles to their work. They attempted to find for every clinical picture anatomic changes in the organism, and Widerhofer's classification is almost entirely an anatomical one. In Gerhardt's Handbook of Diseases of Children, published in 1880, he writes a very complete chapter on gastrointestinal disease in babies, from the standpoint of a pathologist. He recognizes innumerable pathologic conditions, each of which he believes has a corresponding clinical picture.

Some of his main divisions are as follows:

1. Acute gastritis.
2. Chronic gastritis.
3. Dilatation of the stomach.
4. Toxic gastritis.
5. Melaena.
6. Dyspepsia.
7. Enteralgia.
8. Acute and chronic enterocatarrh.
9. Follicular enteritis.
10. Membranous enteritis.
11. Croupous and diphtheritic processes.
12. Syphilitic enteritis.
13. Amyloid degeneration.
14. Cholera infantum.

Such a classification as this is very unsatisfactory, as it does not sufficiently take into account the processes which have produced the pathologic picture. Furthermore, in many of the severest types of gastrointestinal disturbance in babies there are no pathological lesions that can be demonstrated, either in gross or by the microscope. The changes are largely of function rather than of structure. Widerhofer's classification lasted some time, however, and traces of it are still to be seen in several modern textbooks. Most authorities are agreed, however, that the viewpoint of anatomical pathology is not the best one to adopt in considering these disturbances.

Escherich. No consideration of the development of infant feeding would be complete without reviewing the work of Theodore Escherich, although he proposed no new system of feeding or of classification. In his day (1886) the science of bacteriology was in its infancy, and he was the first to study carefully the bacteria in the infant's intestine, and to show the significance that they had in the normal and abnormal intestinal processes and their relation to food in the intestines. He investigated the normal intestinal flora, and showed that it was of two sorts, the fermentative and putrefactive. He showed how the bacteria are necessary for the normal functions of digestion, and how they may cause trouble. He was the first to see clearly that there are two processes going on in the intestine: putrefaction of protein and fermentation of carbohydrate, and he laid down the great principle that the types of bacteria that exist in the intestine are dependent upon the kinds of food fed. That high carbohydrate feeding favors the growth of one group of bacteria, that high protein feeding favors the growth of another group, and that if one type predominates and if the excessive breaking down of either carbohydrate or protein results, the baby gets into trouble. He recognized the fact that when carbohydrate fermentation exists carbohydrate should be withdrawn from the diet, and protein substituted, to change the type of intestinal flora, and vice versa. This is a fundamental principle which cannot be neglected in infant feeding. Indeed, I do not believe it is exaggerating to say that in dealing with abnormal intestinal processes it is the most important principle of all, and nobody can feed babies successfully without taking it into consideration. Bacterial processes in the intestine, and their relationship to the food supply can never be separated from questions of practical infant feeding, either normal or abnormal. In Escherich's own words, "The fact that through designed changes in the food supply the character of the bacterial vegetation, and all the processes that go with it, can be altered, opens to us a broad and remunerative perspective, and in order to apply our knowledge of intestinal bacteriology practically the first and most important thing is a thorough study of bacterial processes in the *normal* intestine. May the views put forth here not be without practical value in the treatment of that murderous pestilence of the first year of life—diarrhea."

Czerny and Keller—(The Fat Period; about 1900—). Previous to Czerny, as we have seen, much had been accomplished in the study of the baby's food of intestinal bacteria, and of the pathology of the intestine; attention had been focused either on the food before it was given to the baby, or on the digestive processes in the bowel; not enough had been given to a consideration of the baby as a whole, and the effect of the different food elements in normal and abnormal conditions upon the general metabolism. It remained for Czerny to take a broader view, to suggest the term "disturbances of nutrition" instead of "gastro-intestinal diseases," and to follow carefully the etiological influence of the various food elements in causing these disturbances. "A study of the general metabolism allows us to follow the fate of the foodstuffs after they have passed through the digestive tract and the influence of unsuitable nourishment upon the whole organism of the infant. Metabolic studies do away with empirical methods of feeding."

Czerny and Keller's monumental textbook on infant nutrition appeared in several parts, the first part coming out in 1906. It is really a marvelous book, showing a broad knowledge and a great power of putting together facts and theories to make a harmonious whole. The style is remarkably clear for a German book, and ideas are expressed with a conciseness and freedom from pedantry that is quite unusual in such a work.

Czerny and Keller's classification of nutritional disturbances is an etiological one, and was undoubtedly the best that had appeared up to that time. They divided nutritional disturbances into three broad groups: (1) from food, (2) from infection (3) from constitution.

In the first group comes (1) fat injury, (2) starch injury, (3) gelatine injury, (4) scurvy.

They describe with great clearness the picture of fat injury (Fettnährschaden) and consider it one of the most important of all food injuries. It arises from overfeeding with fat, is evidenced by constipation, pallor, loss of turgor, and failure to gain. They consider fat the most important of all the food elements in causing nutritional disturbance.

Starch injury (Mehlnährschaden) comes from a one-sided starch diet in the first few weeks of life especially. The baby is much emaciated from lack of nourishment. He has had just enough starch barely to keep him alive, but no more, and his body cells are dying from lack of salts and protein. Thus we see the results of the food injury extending beyond the intestine and affecting every cell in the body; a true metabolic disease is present, and not a mere "indigestion."

Czerny also attacked the old supposition that protein was the most important cause of digestive troubles. He believed it did practically no harm, and did not recognize any such thing as protein injury in his group of food injuries. This was revolutionary, as previous to him attention had been focused on the protein, and all the attempts in milk modification had one particular end in view, to make it of easy digestion. He says, "There is no single symptom which can show us injury to the infant through protein, and from the standpoint of the clinician it is impossible to speak of a protein injury. It is possible that with abnormal flora in the intestine, putrefaction of the casein *might* occur. It is, however, as yet unknown whether or not this actually does happen; and, furthermore, if it should occur, whether or not it has anything to do with nutritional disturbances. In overfeeding with milk in our experiences, a fat injury, and not a protein injury occurs. Overfeeding with protein is hardly possible—it is much more likely that in an artificially fed baby there should be protein underfeeding. We cannot take into consideration a disturbance of nutrition from protein."

Disturbances of nutrition from infection include all conditions which might be caused by bacteria or their products. (1) Infection of the food before it enters the body in such a way that toxic products are formed in it. (2) Infection of the food in the intestine. (3) Infection of the intestinal mucosa itself. Alimentary intoxication is a condition in which the symptoms are caused by the toxic products of destroyed food: in enteral and parenteral infections, the trouble is caused by the bacteria themselves attacking the body; in the former group by infecting the intestinal wall; in the latter group by infecting other parts of the body and causing gastrointestinal and nutritional disturbances secondarily. There are two types of alimentary intoxication: one in which chiefly sugar is being decomposed; one in which the fat is. Fever in these conditions means an injured intestinal wall which makes it permeable for bacteria or their toxins, and very small injuries to the intestinal wall may allow this. The acids from fat or from carbohydrate decomposition are the starters of the trouble in alimentary intoxication. These may be introduced in spoiled milk or may arise in the gastroenteric tract from bacterial decomposition of food. The symptoms of intoxication have many causes, of which only a part are as yet known. It can be assumed as true that a part of the symptoms are caused through water and salt loss, another through the absorption into the body of toxic material from the intestine which could not normally pass the intestinal wall, and finally acidosis must be taken into consideration. Special toxins have as yet not been discovered. Special toxins are not necessary, however, to explain the clinical picture, as nearly all the symptoms are dependent upon disturbances of the intermediary metabolism which are brought about by the pathological processes in the digestive tract.

As to milk modification, Czerny recommends simple milk dilutions with addition of carbohydrate—1/3 milk, 2/3 water for a baby in the first few weeks; then 1/2 milk, 1/2 water; later, 2/3 milk, 1/3 water, and finally about the eleventh month, whole milk. He does not believe in the use of cream in any way, as it is likely to cause fat injury.

We owe to Czerny the first really adequate study of the nutritional disturbances, and the most comprehensive classification of them that had yet appeared.

Finkelstein. The teachings of Finkelstein and his co-workers, Langstein and Meyer, began to come into prominence about 1907, and from then up to the present time have received a great deal of attention. Finkelstein's chief contributions may be summed up in four phrases: sugar, salts, clinical classification and protein milk. Sugar had been, before his day, comparatively neglected as a source of digestive and nutritional disturbances; he makes it the cause of most of them. He studied carefully sugar fermentation in its different degrees, and the results of sugar fermentation, both immediate and remote. Sugar fermentation can be brought about in many different ways, but it is most likely to ferment in a medium which is rich in whey salts, particularly sodium salts. It is the whey salts of cow's milk which are injurious, and not the protein. The whey salts depress the antibacterial function of the cells of the small intestine and thus allow too profuse bacterial growth and consequent fermentation of the sugar. The intestinal mucosa is impaired functionally by the acids which are formed from sugar fermentation, and this functional injury allows the salts and unaltered lactose to pass through it into the general circulation. Finkelstein at first thought that the lactose was the cause of the fever and symptoms of intoxication which occur in some of the more severe cases of sugar fermentation, but later changed this view, and came to regard the salts as the cause of fever. Bacteria and bacterial toxins he does not consider important, except as they are concerned in the original fermentation. His new and startling ideas concerning the salts have caused a good deal of discussion, and have stimulated much research, some of which is in accord with his views, some of which is not. Protein never does any harm, and fat is harmful only when there is a primary sugar injury; sugar is the one particular thing that causes trouble for babies. Thus we see that every food element in its turn has been considered the chief offender—with Biedert, Rotch, and Meigs the protein, with Czerny the fat, and lastly, with Finkelstein, the sugar and the salts.

Finkelstein's classification of nutritional disturbances was likewise different from anything that preceded it. He sees these conditions with entirely new eyes, and builds up a most ingenious edifice in his classification and treatment. His classification is purely clinical; he recognized and studied carefully certain conditions that babies get into through errors in digestion or nutrition; the etiology of those conditions is a secondary consideration. He says, "An etiologic diagnosis I hold to be practically impossible and if it were possible—not desirable. How little, for example, does the diagnosis "nutritional disturbance from infection" mean, when it remains in the dark where the origin of the condition lies, whether from secondary dyspeptic fermentation or other causes. It is best to discard all etiological nomenclature and to adopt the clinical: it is desirable for the physician to be able to say what sort of child he has before him and how this child will react to definite dietetic influences.'' He admits himself that his classification is by no means perfect, and doubts whether there ever can be an absolutely satisfactory classification, as many of the various disturbances shade into one another so closely that it is impossible to separate them thoroughly. To each food of a certain composition there belongs a certain type of disturbance, and there must be as many types of disturbances as there are combinations of food elements.

His four main clinical groups are as follows: (1) Disturbed balance; (2) dyspepsia; (3) intoxication; (4) decomposition. By disturbed balance he means especially the fat injury of Czerny. A baby has previously done well despite adequate or over adequate caloric intake, does not gain, or may actually lose. Instead of a gain of weight resulting from an increase of food a loss is likely to result (the ''paradoxical'' reaction). The food which brings about this disturbance is usually a food rich in fat and protein and relatively poor in carbohydrate; according to Czerny, overfeeding with milk; according to Finkelstein, underfeeding with carbohydrate. His principles of treatment are essentially the same as those of Czerny; reducing the amount of milk and adding carbohydrate in the form of maltose and starch.

2. Dyspepsia is the milder form of sugar fermentation. In this condition the process is localized in the intestinal tract, the loss of weight is not large and there are no symptoms of intoxication; the baby as a whole does not suffer, nor are there serious symptoms unless the condition is untreated or treated wrongly. Dyspepsia is likely to arise from food rich in sugar and whey salts; is favorably influenced by a food low in sugar and high in protein.

3. Intoxication represents a severe metabolic disturbance. It may have started as a dyspepsia, or may be engrafted onto a decomposition. The process here is not localized in the intestine, the whole organism suffers; the child's body is in a state of ''metabolic bankruptcy,'' there is chaos where there should be order. The temperature is high and the baby's general condition bad. The baby is losing nitrogen, water, and salts, and there is likely to be considerable acidosis present. The fever, and most of the untoward symptoms are caused by the whey salts, which have gone through the unhealthy intestinal mucosa into the general circulation. The prognosis is grave. This is the condition which Czerny also describes under the head of alimentary intoxication, although he does not believe it is due to as specific causes as does Finkelstein. He believes it is a resultant of several conditions, many of which we know little about.

4. Decomposition represents what was known to the older writers as ''marasmus,'' ''athrepsia,'' or ''infantile atrophy.'' The condition may arise in a number of ways, either as a result of a prolonged ''balance disturbance'' or a chronic dyspepsia, from an improperly treated intoxication or from prolonged underfeeding or improper feeding. The chief thing about decomposition is the very low tolerance for food; increasing it beyond the limit of tolerance may result either in dyspepsia or intoxication. The baby's body is actually decomposing, every cell in the body is affected, and the organism is not able to assimilate food, even if the digestive processes in the intestine were not impaired.

In order to treat sugar fermentation Finkelstein desired a milk preparation very low in sugar and high in protein. The purpose is to inhibit sugar fermentation by withdrawing the fermenting substance, and to change the bacterial flora of the intestine from carbohydrate splitters to protein splitters by offering a low carbohydrate and high protein food: to promote an alkaline instead of an acid intestinal contents. For this purpose he devised the famous ''eiwess'' or protein milk, a preparation containing fat 2.5%, sugar 1.5%, protein 3.5%. This was made from equal parts of buttermilk and water to which a certain amount of finely sifted milk curd has been added. The principle of protein milk feeding is undoubtedly one of the most important advances ever made in infant feeding, and pediatricians all over the world have become convinced of the worth of Finkelstein's milk or modifications of it. Used in the right type of case, it is without question remarkably efficacious, but like all good things it has been used too much, and in cases in which there is no possible indication or need for it. It is not a universal food for all feeding troubles, but is merely one more very excellent weapon added to our armamentarium.

As does Czerny, Finkelstein recommends simple dilutions of whole milk for feeding most babies, and following him, this method of feeding is used by most of those who have studied in Germany. It has the advantage of simplicity, but does not offer the wide variety of choice in the various combinations of the food elements that the older methods of cream dilutions and cream and skimmed milk modifications do. In the last ten years the influence of Finkelstein has been profound, and it is probable that his teachings are followed more than those of any other authority at the present time.

What conclusions may be drawn from this brief résumé of these various stages in the development of infant feeding? Can we believe that we in the present epoch are entirely right, and that our predecessors have been wrong? This is hardly reasonable, and yet each epoch has been insistent that its ideas are the best, which is only natural. Any period in the development of any human activity is at best only a station along the road of progress, and as research advances many of the old ideas are discarded, some retained and some modified. Any period in the development of any science always owes most of its ideas to the thought of those periods which have preceded it. This is particularly true of infant feeding. There has been in infant feeding no one startling discovery, such as has occurred in most other branches of medicine; its progress has been rather in the nature of a gradual development, and it is still in the developmental stage. When we realize that most of what we have come to believe as true regarding infant feeding has been developed in the last fifty years, it is not difficult to grasp what enormous changes may take place in the next fifty. We are at present in a period —the period of sugar—we have gone through the period of protein and of fat. As we learn more our present ideas will undoubtedly change and the infant feeding of 1950 will probably be little like that of 1920. Whatever classification we use, whosever teachings we adopt, we must realize that there is more than one way of looking at the subject. If we adopt Rotch's teachings, Finkelstein's need not necessarily be wrong; or, if we accept Finkelstein's Czerny's need not be considered erroneous. Rotch's postulate of knowing approximately the percentage composition of the food we offer, and expressing our milk modifications in terms of percentages of the food elements, can perfectly well be combined with the teachings of Czerny and of Finkelstein, and should be.

Something has been gained, something has been added to the whole, by each of the various periods, and the teachings of all these different men are not incompatible. Czerny's classification is excellent, so is Finkelstein's; babies undoubtedly do suffer from fat, likewise from sugar. Some things are not sound in the teachings of either; these will soon be discarded and the good points will remain. Much of Rotch's teachings we do not agree with today—but his main principle, that we must have some method of feeding which will allow us variation in dealing with the individual, some method by which we can express accurately and concisely to others what combination of the food elements we are feeding to any given baby, will always remain. This principle is absolutely sound, and cannot be passed over. It is a pity that European students have not paid more attention to American methods, and it is rare indeed to see a reference to the name of any American author in a German textbook. We in America are far ahead of any method that Europe has yet produced in the modification of milk. European students are far ahead of us in the study of the normal and abnormal chemistry of the baby. As I said before, studies in this country have dealt chiefly with the baby's food and how to prepare it; German studies chiefly concern the baby himself. German methods of milk modification have little elasticity; their whole milk mixtures are, in many cases, quite inadequate. We can learn much from them, however, concerning abnormal processes in the baby, concerning the pathogenesis of the digestive and nutritional disorders, and we should combine our own ideas of milk modification with their ideas of the baby. There are too many practitioners in this country who feed blindly; they have not the remotest idea of the underlying reasons for their procedures, and we can arrive nowhere, no matter how carefully our milk modifications are prepared, or our percentages calculated, unless we understand the fundamentals of the science of nutrition, the digestion and absorption of the foodstuffs, their influence upon each other and the influence of the intestinal bacteria upon them all.

Different sections of the country use different methods and look at feeding problems somewhat differently, despite all that has been written, "that we all feed the same." We do not all feed the same, and probably never will. In the last few years many American pediatricians, particularly from the middle West, have studied in German clinics, have brought home the German ideas and have taught them in the medical schools. Followers of these methods have been rather inclined to look down on the older methods of "percentage feeding," and those who have been brought up in the old methods have given in many cases little heed to the new. The younger disciples of the German school have not investigated carefully enough the teachings of the older American authorities, nor have many of these older American authorities paid much attention to the newer German ideas. The two should be combined; German chemistry, American milk modification. More good research work in problems of infant nutrition is being done in this country than ever before, however, and it will undoubtedly be productive of much good. We owe to German investigators most of what we know regarding the baby's normal and pathological chemistry; we owe to American investigators most of our knowledge regarding modifying cow's milk to make a suitable food for him. I cannot believe in the exclusive use of whole milk mixtures (the German drittel milch, halbmilch, and Zwei drittel milch) as practiced at present in many parts of the country, and feel certain that for general use better results can be obtained with more elastic methods, which will allow more variation in the relationship of the food elements to one another. Many babies can be fed, and fed successfully, on whole milk dilutions from the time of birth onwards, but in many cases we need combinations of the food elements that no whole milk dilutions can supply. Any experienced pediatrician uses all the methods of milk modification, however; he knows what combinations of the elements he wants and gets these in a simple way, if possible. If not possible in a simple way, he turns to other methods. No infant feeder of experience sticks to one method of milk modification exclusively, any more than any internist of experience has one routine method of treatment for any given disease that he may be dealing with. Infant feeding need not necessarily be made abtruse and complicated, but it must not, on the other hand, be made too superficial. *The practitioner must know his food elements and be able to trace them in their progress through the digestive tract; he must also have several methods of milk modification at his command, so that he can combine these elements in any way he desires to meet special indications; the various milk preparations and methods of milk modification are the "tools of the trade," as Dr. Rachford of Cincinnati has aptly said.* Whatever we believe about the various food elements, we must realize that most of the time it is not exclusively one food element that causes trouble; it is rather improper combinations of the elements. We may be able to feed a baby successfully on a high fat and low protein, but as soon as we employ a high protein and high fat we may begin to get trouble with the fat digestion. Large amounts of one element may be handled well by the baby, large amounts of two or more elements usually get him into trouble.

I can conceive of only two reasonable methods of classification, the etiological and the clinical. Whichever we follow we must realize that the other is not necessarily wrong; it is merely another way of looking at the same phenomena; a difference in nomenclature rather than in actuality. My personal feeling is that the etiological nomenclature is the more satisfactory, despite certain disadvantages; there are many, however, who would not agree with this. This nomenclature is advantageous in that it makes us think especially of the various elements and what they can do to the baby; it is dangerous in that it has a tendency to focus itself upon one element to the exclusion of the others, and it unquestionably does not describe the various conditions in which the baby may be, as well as does the clinical nomenclature of Finkelstein. There is no question but that at the present time Finkelstein's teachings are influencing infant feeding more than those of any other man or group of men. Many of his ideas will last, but a good many will undoubtedly be discarded as further progress is made. There is no telling what the next generation will bring forth, but judging from past history, our ideas concerning infant feeding then will bear little resemblance to our ideas now; in such a young science there is possibility of infinite change in the next few years. The salts and their relationship to the other food elements, their influence upon digestion and upon cell metabolism seem to offer the most fertile field for research and progress.

Realizing that we have by no means as yet reached the solution of the problem, we must be broad minded, must keep away from fads, must not focus on one point to the undue exclusion of others, must accept the fact that there is more than one way of looking at this most interesting subject, be not too assertive and dogmatic in our statements, and remember that what is apparently true today may be proved false tomorrow.

ANESTHESIA IN OBSTETRICS.

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In the surgery of this generation, the selection of an anesthetic and the mode of its administration has become an important factor, not only for the comfort and safety of the patient, but also for the very material assistance to the surgeon whose results and technique are invariably better when an anesthetic is properly given.

Anesthesia in obstetrics is becoming equally important, and its use more and more common. It is the purpose of this paper to discuss the desirability of an anesthetic in this class of cases together with the selection of the anesthetic used and its method of administration.

There are two factors which are leading to the use of anesthetics in obstetric cases. First, obstetricians are beginning to realize how much a properly given anesthetic really aids in safe delivery and the added facility in the management of the case; second, the general public is demanding relief from the pain and distress of labor as far as that can be prevented. What used to be a luxury to the average patient is now a necessity.

The reasons for this new need are indefinite. Is labor today more painful than it was fifty years ago in the average case? We hear all sorts of answers to such a question. The modern patient is perhaps not as well fitted to bear the same amount of pain as her ancestor, and we have now the well established fact that continued poorly borne pain leads to true surgical shock. Weighing these facts, is it not true that the resultant shock which is so commonly observed after a long difficult labor, is more dangerous to the patient than a carefully administered anesthetic? Physically, women of today may be equally well fitted for child bearing to the women of several generations previous to ours, but mentally they are not. A few years ago there was no pre-natal care, no pelvimetry and no sphygmomanometer. These instruments have led us to observe abnormalities which could not have been recorded in the past. They have warned us of disaster ahead, much of which is preventable, but they have neither increased nor decreased the pain of the average pregnant women who deliver themselves.

An anesthetic, however, not only relieves subjective pain and its resultant exhaustion and shock, but greatly conserves the nervous expense to the patient, allowing for better controlled energy and better trained use of her expellant powers. The patient who is exhausted by the nagging pain of a prolonged first stage of labor cannot meet the second stage suffering with the nervous equanimity and determined effort as of the patient who has had help in the first stage and knows that she may have more help as labor progresses.

In an effort to give the patient an ideally painless, or nearly painless, labor, many soporific and anesthetic drugs have been used, and each one in its turn has been equally disappointing. The reason for this is the quite different situation between the ordinary surgical case and the ordinary obstetrical case.

In surgery, the patient is anesthetized for a relatively short time,—rarely over two hours. Complete relaxation of all muscular rigidity is highly desirable. There is but one patient at a time to consider. The surroundings are generally ideal. The anesthetic is easily given, for the patient goes under its influence and remains so until the completion of the operative measures. A little deeper or a little lighter anesthesia makes no difference in the procedure of the work, so long as muscular relaxation is obtained. In fact, a practically perfect anesthesia,—from the surgeon's point of view,—may be given by an inexperienced and quite untrained anesthetist. But we are more and more realizing that the patient should have the benefit of a trained specialist in this field as well as a skillful surgeon.

In obstetrics there is a much more complicated series of problems presented by the desirability of using an anesthetic. The anesthesia must be over a long period of time, often non-continuous but intermittent. If pushed to the stage of muscular relaxation, it may be a complete failure if the progress of labor is lost. There are two patients' lives to be considered,—mother and child. The surroundings are often far from ideal. The degree of anesthesia must be perfect; a little too light,—and the patient has pain, real pain; a little too deep,—and the forces necessary for delivery are inhibited. That means skill on the part of the attendant, perfectly working mechanical apparatus, and conscious coöperation from the patient. A difficult combination, but, as we shall see, a possible one, and precisely attained by attention to details of technique.

The advantages which must be attained in an anesthetic suitable for obstetrical work are as follows:

1. Relief of pain.
2. Safety to the mother.
3. Safety to the child.
4. Safe and capable of administration over a long period of time.
5. Safe and capable of administration intermittently.
6. Comfortable for the patient, that is without side action of nausea, vomiting, or other toxic manifestations.
7. Simplicity of apparatus, easily portable.
8. Low cost.

Take away any of these desirable features and the practical value of any anesthetic is *nil* in confinement cases.

There is no single drug useful for anesthesia which combines all the features that are ideally desirable in this work, certain anesthetics having glaring disadvantages which relegate them as absolutely undesirable. Others have their minor disadvantages which partly reduces their efficacy in obstetrics. The selection must obviously be made of the anesthetic or combination of anesthetics which have the most essential features and the least important disadvantages.

Ethyl ether relieves pain according to the degree to which the anesthetic is pushed, but when complete relief is obtained, there is total muscular relaxation, and that, in obstetrics, means inhibition of uterine contraction. There is, however, a happy medium of administration easily obtained, where the patient's expulsive power is not seriously diminished, but her suffering is greatly, although not entirely, relieved. In fact, this degree of etherization is commonly spoken of as the obstetrical degree. Ether is absorbed through the alveolar lung surface with moderate rapidity. It is excreted slowly through the lungs. It embarrasses foetal respiration to some extent, and is not, therefore, safe when used over a considerable length of time. Children are born anesthetized, which adds to the difficulty of resuscitation. Ether is irritating to the kidney tissue, and is quite unsuitable in the presence of organic renal disease of the mother, or of the severer forms of toxemia. It has an unpleasant side action resulting in nausea and vomiting in a large percentage of patients.

When pushed to the surgical degree, it is a most satisfactory all around anesthetic for operative work where muscular relaxation is essential.

Chloroform is much more easily absorbed and is excreted with much greater rapidity than ether. It is, therefore, preferable for intermittent anesthesia. It has the advantages of being pleasanter to take by the average patient, and rarely produces nausea and vomiting. The margin of safety between the stage of anesthesia and respiratory paralysis is very small and its administration must be in the hands of a careful, painstaking expert anesthetist. It is equally dangerous to the foetus and the mother, and the element of danger is enough to discard it for general use. True, it is used in certain communities and by certain physicians who report unfailing success. Suffice it to say that results do not sufficiently justify its use in the well known clinics of the country where safety and good results are paramount.

Nitrous oxide gas relieves pain without inhibiting the force of uterine contractions. In fact, there are experimental evidences which indicate that the gas stimulates smooth muscle to contract and therefore uterine activity, resulting in shorter labors. It is very quickly absorbed and is as rapidly excreted as the expiration rate allows. It is comfortable for the patient, and rarely produces nausea or vomiting.

Alone and in inexperienced hands it is dangerous for both the patient and her baby, for respiratory paralysis takes place suddenly and without the slightest reliable sign if too much is given. Combined with air, or better still, with pure oxygen, it is safer, and can be given either continuously or intermittently over a long period of time without harm to the mother or embarrassment to the foetus. Its main disadvantage is the bulky complicated apparatus which is required and the cost of administration. In the past, its use has meant the employment in every case of a competent anesthetist. Recently, however, through the ingenuity of manufacturers, a simple and highly satisfactory device has been developed which allows for self-administration by the patient with perfect safety. This element of self-administration is of vast importance and marks an advantage never before satisfactorily accomplished. After all, the patient herself knows more than any observer how great is the pain, and she is, therefore, the best judge of how much relief she actually needs for that pain. This is not only true throughout an entire labor, but also for each uterine contraction, some of which are wholly bearable even to the most neurotic individual, while others are wholly unbearable to the patient of exceptional fortitude. Further, patients appreciate their own ability to regulate the anesthetic according to their desires, rather than to have their consciousness subject to the will of another. Nitrous oxide can be given from the first pain of the first stage of labor to the last pain of the second stage of labor. It is equally available for immediate perineal repairs, manual detachment or even the Crédé manouver for placental adherence. For extensive operative work, such as version, forceps or breech extraction, it is practical when given by an assistant.

A further advantage when oxygen is available, as it is in all modern gas apparatus, is in the resuscitation of the new-born infant, whether asphyxia is due to anesthesia, compression of the cord, or long difficult operative cases. Before the cord is cut, oxygen is freely administered to the mother, the oxygenated blood passes to the child through the placental circulation. The result even in pallid asphyxia is spectacular.

Morphine, scopolamine, chloral, and drugs of a similar nature have all been used alone and in combination. They have one serious disadvantage. Once given, their rate of absorption varies with patients and their rate of excretion is equally uncertain. A dose of morphine may have had its therapeutic action on the patient but still be active in its effect on the baby. Give another dose to the patient and we get a summation, amounting to a toxic dose on the foetus. We would not give a new born child a hypodermic injection of morphine even of an amount appropriate for a child; why, then, give it a dose into its blood stream of adult size? Of scopolamine and chloral the same is true. But even if we discount the effect on the child, these drugs are not only not practically efficient in relieving pain for so long a period as the average labor, but therapeutically wrong on account of our utter lack of knowledge about the individual idiosyncrasy of the patient, and the most important of all, the indefinite time of excretion. The first dose is not excreted by the time we must give another. Toxic action is still going on and may lead to acute poisoning. These drugs are useful, of course, as drugs, but not as anesthetics. They serve to give the patient a temporary, anodyne effect in those cases where the progress of labor is slow and when the patient is becoming exhausted by her efforts. Temporary rest will allow her to recuperate her powers for a renewed energy.

The sudden enthusiasm recently for the so-called "Twilight Sleep" is the result of somewhat injudicious lay articles in popular magazines. The use of scopolamine for the relief of child-bearing pain is not a new idea. Many years ago it was tried by a number of very competent obstetricians in Boston, New York, and Chicago. Sane reviews of their results does not justify its general use and the experimenters themselves have long since discarded the drug as dangerous because of its toxicity to both mother and child. Under the influence of twilight sleep babies are almost universally born in a state of livid asphyxia. Foetal mortality is high in Gauss' Clinic at Freiburg, where it has been so extensively used. There are physicians today who are using this method and claim splendid results. The result is not anesthesia or analgesia, but narcosis. It does not relieve pain, but the patient is so thoroughly saturated with the drug that she forgets the pain after recovery. Morphine, scopolamine, and similar drugs unless given in toxic and therefore dangerous doses, are not enough relief to the patient. When given in toxic doses they are not safe enough to run the chance, especially when safer and more efficient methods may be used. A further point in their use lies in the fact that they do not keep the patient quiet. She tosses around in her pain, and that restlessness seriously interferes with the proper management of the case. A single false move may ruin all the barriers of asepsis which have been perfected to protect her. The patient is practically drunk. Painful impulses are received and recorded by the brain and cord, but result in incoördinate and inappropriate motor replies.

Regional and spinal anesthesia have been tried with various results. Their chief difficulty lies in untoward side actions such as nausea, vomiting, headache and muscular pains. Local anesthesia applied to the cervix and perineum give splendid results as far as they go, but it is obviously impossible to cocainize the entire birth canal practically. It is not improbable that this method will some day be revived with success, given the proper apparatus and technique.

This brief, rather generalized review of the pharmacological properties and clinical action of the several substances available for obstetrical anesthesia. logically leads us to the conclusion that there is no single drug ideal for the purpose. Each has its advantages and each has its dangers. Many of the possible combinations are equally unsuitable. There is, however, one combination that while not ideal is sufficiently useful in producing the desired result,—freedom from pain throughout labor, and with as much safety as the average surgical etherization. This combination is nitrous oxide gas, oxygen and ether. It may be used with equal success for the long tedious primiparous labor, the short multiparous relatively easy birth, the labor attended by toxemic complication, even convulsions, and all of the minor and major operative obstetrical procedures. It is efficient, relieving pain. It is safe in moderately well trained hands, it is useful. The technique is simple, and may be managed by the patient of average intelligence without the absolute necessity of an anesthetist.

The method of administration and the clinical picture of its use is as follows. In the early part of the first stage, no anesthetic is necessary except in the extremely neurotic patient. Its use then should not be encouraged, but it may be employed if need be from the very first pain. In all cases, as the pains progress it is a good plan to begin the use of light anesthesia, or better, analgesia. At the very first indication of a contraction, the patient puts the mask over her mouth and nose and inhales in rapid succession three times, taking full breaths of undiluted nitrous oxide. She then holds her breath, until the contraction is subsiding. With the first breath her only sensation is one of the sweetish odor of the gas. With the second breath, she gets a tingling sensation, and the pain of contraction is just barely noticeable. With the third breath, there is a complete numbness, although the patient is clearly conscious. She holds her breath and the numbness is modified by a sense of warmth, or, as she will say, "a glowing sensation." This generally lasts as long as she can conveniently hold her breath; during the time the uterus has shown no sign of abating its power, but has undergone a strong clinically normal contraction. By the time the patient is ready for a breath of air, of her own volition, the pain is petering out. She is slightly dazed, but almost immediately recovers her full consciousness. She has been in complete possession of all of her faculties, can hear and comprehend what is said to her or what has been going on around her, and yet like a dream there has been no physical suffering.

Physiologically, at the first breath, she inhaled a combination of gas and air; and on the second and third breaths, pure gas. The gas was absorbed by the blood stream and eventually carried to the uterine wall. As it reached the uterus, that organ was in a state of contraction, which means that all of the blood vessels in its walls were squeezed and constricted by the surrounding smooth muscle fibres. Such pinching of the vessels mechanically prevents to some extent the full discharge of gas laden blood into the foetal circulation, by the temporarily restricted placental interchange. Such a delicate physiological mechanism in part accounts for the lack of anesthetization of the unborn child, as contrasted to that when the gas or any other anesthetic is used continuously.

With three such inhalations as have been described, the majority of first stage pains are relieved for the patient completely, although uterine contraction and resulting progress are not inhibited. As the pains increase in intensity with the progress of labor, it is necessary for the patient to take more gas. By a sort of natural selection she soon learns to take more or less gas by inhaling more or less times, according to the sensation of uterine contraction. This sensation is almost intuition, and after a few times the patient will gauge the amount of anesthetic necessary to keep her comfortable, with a nicety impossible for an anesthetist to attain.

If, during the periods of analgesia, the patient exhibits any cyanosis, the apparatus can be adjusted to admit more air or pure oxygen. This will safely permit of analgesia, or, if necessary, anesthesia for each labor pain until the so-called perineal stage of delivery. It may go on for hours. I remember one patient who took the gas herself at periods of every three or four minutes during an entire night,—ten hours. At the end of that time the foetal heart was as regular and of as good quality as at the onset of labor. Of course, between the pains, the patient is completely conscious. She can converse rationally and is cheerful. I have seen a patient in the early part of the first stage walk around, and at intervals of eight to ten minutes, sit in a chair and take a little gas for each pain. Of course, such a procedure would not be safe unless light analgesia were taken. In the case cited, the patient was using only the lightest analgesia, and I am frank to admit that there was undoubtedly more psychic effect than anything else. Later on, however, she had the benefit of intermittent anesthesia, self-administered, and delivered easily and comfortably.

The whole secret of the technique is to teach the patient how to use the apparatus, and to teach her to begin the inhalations at the first indication of an approaching contraction. She must work rapidly. A few seconds' delay will mean that at the height of the pain she has not yet absorbed enough of the gas to gain the desired comfort. A few seconds too early and she is out of the analgesia before the pain has died down. If she takes enough gas the stage of complete anesthesia occurs rapidly. There is a complete loss of consciousness, and she cannot comprehend any more than an etherized patient, her voluntary muscles relax, and automatically the inhaler drops from her face, and she breathes air. Strangely enough, the uterine muscle does not relax, but its tone and strength are maintained, with real progress in expulsion. By the time the patient is conscious again, even the prolonged agonizing pain of late second stage labor has abated for an interval.

In nearly every case, when the delivery is at hand and the perineum begins to bulge, the gas is not enough. Then there must be an admixture of ether. This does not mean a substitution of ether but a true mixture of gas and ether, without or with oxygen. Complete etherization is unnecessary and inadvisable. A small amount, rarely over two fluid ounces, will suffice, added to the nitrous oxide, to completely anesthetize a patient for delivery, even when preceded by episiotomy. The addition of the ether means in most apparatus simply turning a valve, and holding the mask on the patient's face. Naturally anesthesia cannot be continued by the self-administration method. At that time a nurse who has previously received the few necessary words of instruction can safely turn on the ether and satisfactorily conduct the anesthesia for the few moments needed for delivery, without any necessity for the accoucher to break his asepsis.

As soon as the baby is born, ether and gas are turned off, the inhaler removed from the patient's face for a moment, and pure oxygen blown through it to remove all traces of the anesthetic. Then it is replaced on the patient's face and a few inspirations of the oxygen undiluted will not only result in removing all signs of asphyxia in the baby and stimulate normal respiration, but will usually revive the mother to dazed consciousness. In those cases where immediate repair of the perineum is indicated, the patient can take a few breaths of the gas for each suture, and that will make the operation painless without excessive delay. In a like manner, the Credé method of placental expression or even manual detachment can be similarly done without discomfort. In the truly operative cases, such as breech extraction, version, or forceps, naturally the case approaches in its features any surgical operation. Ether is then the anesthetic of choice. Gas oxygen is available and may be given, if ether to a surgical degree is contraindicated. But operative deliveries usually follow long hours of preliminary labor and its attendant pain. If gas has been used, the patient is in much better condition for the operative work than otherwise, and she takes the ether sequence with more equanimity and with less physiological disturbance.

The cost of this method of analgesia and anesthesia varies with the case. Some patients are inclined to use more gas than others. The longest case I remember is one in which over a period of nearly 28 hours the gas was used discontinuously and gas oxygen had been used for inserting Voorhees bags on two occasions. The case finally came to operative delivery, with gas and ether. In all, 300 gallons of gas and 40 gallons of oxygen had been used at a total cost of twelve dollars. The cost of the anesthetic in the average primipara will amount approximately to seven dollars. In the average multipara, to about four dollars. In some cases it will be as low as one or two dollars. It is worth it. Patients are willing to pay and pay well for comfort, and they reappear at a later pregnancy to make arrangements for the same comfort again.

In this method of analgesia in the early part of labor, and anesthesia later, the results, excluding all other factors, are excellent. Of course, no matter how perfect the anesthetic, or how painless the labor, if the actual technique of delivery is not good, the results will be poor. Anesthesia does not make up for careless obstetrics with questionable asepsis. In other words, it solves but one fundamental problem,—that of giving modern mothers relief from the suffering of labor. I have used this method in nearly one hundred consecutive cases, some of them my own, and some of them for other obstetricians. In no case has there been difficulty in resuscitating the baby. In two, the children have been still-born, both operative cases. One was a primipara who had a central placenta praevia and suffered severe shock from a difficult manual dilatation and manual extraction. The other was a primipara in whom the forceps failed, version was performed, and for the safety of the patient, slow careful delivery resulted in compression of the cord too long for the child to be born alive. In every case, the patient has voluntarily testified to the comfort of the analgesia and almost every obstetrical complication has been met in the series.

I firmly believe that properly used and with perfectly working apparatus that nitrous oxide analgesia and anesthesia, with oxygen, and supplemented by ether in selected cases can be administered in 99% of all obstetric cases so as to give the patient a practically painless labor. I believe that this can be done at much less expense than is commonly supposed, and from the purely technical point of view, it saves nervous strain and often true shock, and greatly facilitates the general management of the case. Our patients are entitled to its comfort.

Book Review.

IV Congreso de la Asociacion Espanola de Urologica, Temas oficiales, Comunicaciones y Discusiones. Publicados bajo la direccion del Dr. Pedro Cifuentes, Secretario General. Madrid: Imprenta Comercial. Valvarde, 21. 1918.

This pamphlet, of over four hundred pages printed in Spanish, contains the report in full of the transactions of the Fourth Congress of the Spanish Association of Urology, held at Madrid in October, 1917. It embodies the usual papers on renal, bladder and prostatic subjects, with their full discussion, and it resembles in most ways the reports of similar surgical associations in this country.

There are several excellent papers on renal tuberculosis; one on the phthalein renal test: several good discussions on the treatment of bladder tumor: and two or three studies of prostatic diseases—the pathogenesis of prostatic hypertrophy, the infections other than gonorrheal to which this organ is subject, and the syphilitic manifestations which may occur in it. There are many less pretentious papers—reports of cases, consideration of local anesthesia.

The remarks on the treatment of bladder tumors in the article by Dr. Bartrina are perhaps the most important work in the report, but his paper is illustrated by a series of sketches which would not be deemed adequate in a similar paper published in this country. On the whole the articles are of a high grade, the discussions are adequate, and the publication is clearly printed on good enough paper, and shows a proper care in its preparation

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THE PROBLEM OF THE COMMUNITY WITHOUT A PHYSICIAN.

There are many small communities throughout the country that are without physicians. Some which have come to our notice have been so for three years and are without any prospects of obtaining a practitioner. Such a condition is a calamity. How to secure adequate medical attention and at the same time have it efficient is the problem which is before these communities. Physicians cannot work without adequate compensation,—just what that compensation must be depends upon the cost of living and the work required; but it is very doubtful if satisfactory medical service can be obtained unless the physician has an income of from $3,600 to $5,000 a year. Most communities can afford this amount.

While we do not approve of a "contract practice," we do believe that communities that are without medical attention should make a contract with a physician which should take the form of a guarantee of a certain salary for the year. He should be free to charge the regular fee, but if at the end of the year he has not collected the specified amount the deficiency should be made up to him. What would this mean to the community of perhaps 1,000 persons? A guarantee of $3,600 would mean $3.60 per year per individual, or in round numbers 30 cents per month, or 7½ cents per week. Any community can afford that sum. There are many capable young men who have just graduated from college who would be glad to enter into such an arrangement and who would do good work. The trouble at present is that communities wish the physicians to come to them and take all the risks of making a living, regardless of the fact that larger communities usually offer better opportunities for success.

There are in Massachusetts at the present time seventy-three towns without a registered physician. The total population of the state is estimated at 3,991,969, for whom there are approximately fifty-four hundred physicians. Boston has about nineteen hundred, or one-fifth of this number, whereas in the Berkshire regions, on the Cape, and at almost any point west of Worcester and far from a large town, the people in rural districts are forced to get along as well as they can without medical attention. The following towns are among those which have no registered physician: Acushnet, Alford, Auburn, Avon, Bernardston, Berlin, Bolton, Boxborough, Boxford, Boylston, Brimfield, Buckland, Burlington, Chilmark, Clarkesburg, Dover, Dracut, Dudley, Dunstable, Eastham, Egremont, Florida, Gill, Goshen, Granby, Halifax, Hancock, Hawley, Heath, Holland, Leyden, Lincoln, Mashpee, Mendon, Middletown, Monroe, Monterey, Montgomery, Mt. Washington, New Braintree, Norwell, Oakham, Otis, Pelham, Peru, Petersham, Phillipston, Plainfield, Plainville, Plympton, Raynham, Rehoboth, Richmond, Rochester, Rowe, Sandisfield, Savoy, Seekonk, Shelburne, Shutesbury, Southampton, Southwick, Tolland, Truro, Tyrington, Washington, Wendell, West Boylston, West Stockbridge, West Tisbury, Westwood, Windsor.

Many Massachusetts towns are without nurses. Of the three hundred and fifty-four towns in the state, one hundred and sixty-five have nursing service and one hundred and eighty-nine have none; there are thus over three hundred thousand people in Massachusetts without public health nursing service. Furthermore, many of these people live in isolated towns to which private nurses do not wish to go. The present situation is an unfortunate one, due in part to the unsettled conditions following the war, in part to the dislike manifested by doctors and nurses toward life in rural districts, and in part to the indifference of the people in general.

That these small remote towns can help themselves has been shown by the experiment tried in Great Barrington, a small town in the Berkshires. It combined with the surrounding towns to extend the work of the Visiting Nurse Association of Great Barrington. This associahas existed for eleven years: from eighty-nine patients in the first year, with 1140 visits made, the number has increased to 569 patients during the past year, with 4376 visits. Each town helps to support the association, making a total population of 9600. The work which has been accomplished among the children has revealed their great need of competent care; the spirit of coöperation shown by these children promises well for their future.

Small towns without medical service should appreciate the fact that a combining of effort for health and social enjoyment would so improve conditions that doctors and nurses would be willing to live in rural districts. As the Red Cross will send no nurse to a town in which there is no doctor, until physicians can live in country districts with some degree of comfort and assurance of a livelihood, that society is not available for service in those places. If our national future is to be safeguarded by preventing the development of physical disabilities among the children of this generation, it remains for rural communities, physicians, and public health agencies to coöperate in helping to solve the problem of medical care in small towns.

* * *

BOTULISM.

In view of the recent newspaper articles describing the poisoning of persons in different sections of the country from the eating of infected olives, an article in the U. S. Public Health Reports of February 13 is of timely interest

The cause of poisoning has been ascribed to the toxin of the *Bacillus botulinus*. This organism has been found in various food products for man and beast. It has been traced to canned beans, asparagus, corn, to cheese, sausages, and mouldy hay. The Bureau of Chemistry of the Department of Agriculture has been active in trying to remove these dangerous products from the market and to find the cause and character of the decomposition. An investigation of cases reported from Ohio, Michigan, Montana, New York, and Tennessee, showed that in every instance the cause was due to eating infected ripe olives that were packed in glass. No cases were reported from olives packed in tins. In Montana the jar contained ripe stuffed olives. With the exception of the olives eaten by persons in Tennessee and Michigan, these olives were packed by different firms. It is thought probable that the olives packed in tin may have escaped infection due to the better sterilization and sealing of tinned goods in comparison to the ordinary methods with glass packing.

The article in the U. S. Public Health Report states that the *Bacillus botulinus* has never been found in food that was not spoiled. How it gets in the food is not known. Sometimes it is found only in a few specimens of a large number of food products. It has been found in articles prepared in the careful home as well as in the factory. It is known that proper sterilization and sealing usually prevent the development of the poisonous organisms; but this process ordinarily is not perfect.

The best preventive measure against botulism is, of course, to check the sale of such goods; but considering the millions of packages of healthy food products that pass through interstate traffic, the occasionally infected article is difficult to find. The Bureau of Chemistry is limited by law to the seizure of actual decomposed or poisonous foods. Any food showing the slightest trace of unnatural odor, color, gas formation or any other evidence of decomposition should be avoided. The fatal result of a small amount of this toxin is so marked that while all spoiled food may not contain *Bacillus botulinus* it is only safe to discard any product of which one is suspicious.

* * *

DR. ORION KELLY, a practicing dentist in Winchester for 22 years, died, at the age of 44 years, on February 24. Dr. Kelly was born in Yarmouth, N. S. He was graduated from Tufts Dental School and began practicing in Winchester in 1898. Dr. Kelly was an instructor at the Tufts Dental School. He is survived by his mother, his widow, and his daughter.

MEDICAL NOTES.

American Military Hospital at Vilna.—A new American military hospital has been established at Vilna by the American Red Cross, for the purpose of demonstrating to Polish army doctors the latest developments in military surgery as practised during the war on the eastern front. Detachments of Polish surgeons will be given three-month courses of instruction at the hospital under the auspices of the University of Vilna. The courses will be conducted by Major F. Black of the American Red Cross.

Inectious Diseases in Europe.—A recent report from Warsaw announces that Poland, and, what is more, the whole of Europe, is threatened by an epidemic of infectious diseases which is sweeping westward from Russia. Typhus is spreading over the whole of Eastern Galicia and has reached epidemic proportions in Cracow. The plague has appeared at Chotin on the Dneister near the Galician border. It is believed that this wave of disease has been spread from Russia by repatriated Poles who have just reached their own country. It has been reported that there were 1,340,000 cases of typhus among Bolshevists in Russia in the six months from September, 1918, to March, 1919. During the last six months of 1919 the disease had increased fifty per cent.

Army Hospitals.—A recent report of the Surgeon General shows that on January 9 there were still fourteen army hospitals in operation with 14,370 soldiers as bed patients. The report stated that on February 15 General Hospital No. 20, Whipple Barracks, Arizona, and General Hospital No. 42, Hampton, Virginia, would be closed, the patients in need of further treatment to be transferred to other hospitals.

Mortality Statistics in the United States.—The annual mortality statistics issued by the Census Bureau on February 2, 1920, shows that the death rate in the United States for 1918 was the highest on record. There were 1,471,367 deaths for the year, representing a rate of 18 per 1,000 population in the death registration area of thirty states and twenty-seven cities, with a total estimated population of 81,868,104.

Of the total deaths 477,467, or more than 32 per cent., were due to influenza and pneumonia, 380,996 having occurred in the last four months of the year when an epidemic prevailed. The rate for influenza and pneumonia was 583.2 per 100,000. Influenza caused 244,681 deaths and pneumonia 232,786, showing rates of 289.9 284.3 per 100,000, respectively, these being the highest rates which have ever appeared for these causes. The rate in 1917 for influenza was 17.2 and for pneumonia 140.8.

The other principal causes of death were organic diseases of the heart, tuberculosis, acute nephritis, Bright's disease and cancer, which together were responsible for 391,391 deaths or nearly 27 per cent. of the total during the year.

BOSTON AND MASSACHUSETTS.

Week's Death Rate in Boston.—During the week ending March 13, 1920, the number of deaths reported was 250 against 275 last year, with a rate of 16.13 against 18.01 last year. There were 49 deaths under one year of age against 46 last year.

The number of cases of principal reportable diseases were: Diphtheria, 24; scarlet fever, 60; measles, 199; whooping cough, 91; typhoid fever, 3; tuberculosis, 48.

Included in the above were the following cases of non-residents: Diphtheria, 3; scarlet fever, 13; measles, 1; tuberculosis, 5.

Total deaths from these diseases were: Diphtheria, 2; scarlet fever, 1; measles, 2; whooping cough, 3; tuberculosis, 16.

Included in the above were the following non-residents: Measles, 1.

Influenza cases, 80; influenza deaths, 11.

Influenza in Boston and Massachusetts.—On February 26 there were reported to the health department in Boston 55 cases of influenza with 10 deaths from influenza and 6 from pneumonia. Holden reported 68 cases for the preceding several days; Stoneham, 43; and Haverhill, 40. The total number of cases throughout the state was 482. On February 28 there were reported 3 deaths from influenza in Boston and 11 from pneumonia. There were 233 cases of influenza throughout the state, of which 37 were in Boston. During the week there were 450 cases of influenza in Boston, with 73 deaths. There have been 44 deaths among the patients at the Long Island Hospital during the past three weeks. On March 2, 5 deaths from influenza and 7 from pneumonia were reported in Boston, and on March 3 there were 32 cases of influenza with 4 deaths, and 9 deaths from pneumonia.

Exchange Professor from the Institute of Technology.—Dr. William T. Sedgwick, senior professor of the Institute of Technology, and head of the department of biology and public health, has been elected to be the first exchange professor with the British universities of Cambridge and Leeds. He will leave for England in April and will return to Boston in September.

Harvard Professors in Geneva.—Dr. Simeon Burt Wolbach, Dr. Frank H. Palfrey, and Dr. Monroe A. McIvor, of the Harvard Medical School, and Prof. Henry Pinkerton of the Massachusetts Institute of Technology, have arrived at Geneva, where they will confer with the general medical director of the League of Red Cross Societies concerning the work which is to be carried on in Poland in the study of typhus fever. Professor George Whipple of Harvard University has reached Geneva, to take up his duties as chief of the sanitary department of the Red Cross League.

Harvard Infantile Paralysis Fund.—The Harvard Infantile Paralysis Commission has received contributions to the amount of $10,426.87, and is urgently in need of additional funds in order to carry on its work.

Public Bequests.—By the will of the late Mr. Wallace F. Robinson, the Industrial School for Crippled and Deformed Children is given $10,000, and the Boston Nursery for Blind Babies, $5,000.

Dental Clinic for Arlington Schools.—There is to be established by the Arlington Board of Health a dental clinic for the public schools. School children are to have dental care for nominal fees, or free of charge if their parents are unable to pay for the service.

* * *

Dr. Sally Robinson Creighton-Best died at her home in New York on February 6, 1920. Dr. Best was graduated from Cornell Medical College in 1899. During the war she placed herself in the service of the United States Government in the censorship of drugs. At the end of the war she resumed the practice of medicine in New York. Dr. Best was an active member of the Executive Committee of the American Women's Hospitals.

Obituaries.

ELMER ERNEST SOUTHARD,
A.M., M.D., Sc.D.

Dr. Southard died February 8, in New York, of pneumonia, after an illness of three days. He had, during the week, spoken at a meeting of the New York Neurological Society and also given an address at the annual meeting of the National Committee of Mental Hygiene. His death came, therefore, at the height of his activities and without warning, or knowledge on his part of the seriousness of his condition during the short period of consciousness preceding the end.

Born in Boston July 28, 1876, he went through the conventional preliminary education of a Boston boy,—the Boston Latin School, Harvard College in the class of 1897, and the Harvard Medical School in the class of 1901. He was always distinguished as a student of independence and originality. He was not given to the ordinary athletic interests of youth, and thereby gained time for reading, which from his earliest years, was an absorbing occupation. He learned easily, his memory was peculiarly retentive and he enjoyed his work as others enjoy their play. In college he was early interested in grammar, and from this turned to philosophy; he was especially influenced by the teachings of William James and Josiah P. Royce, which was apparent in all his later work, James leading him in the direction of practical formulations and Royce in the direction of logical speculation and metaphysical abstraction. The natural sciences also engaged his attention in his collegiate days, as attested by the fact that he was graduated with distinction both in philosophy and natural history. In 1902, he was given the degree of A.M. from Harvard and in 1917 George Washington University conferred on him the honorary degree of Doctor of Science. Chess was one of his serious amusements; during his stay at Cambridge he was the intercollegiate champion in each of the four years and became one of the really distinguished chess players of the country.

With a mind versatile and well trained, he began his active professional career. He entered with enthusiasm into the study of pathology under the direction of Dr. W. T. Councilman and Dr. F. B. Mallory and served a term in the pathological laboratory of the Boston City Hospital. His special interest in the nervous system soon asserted itself, and during this period he spent some months abroad with Weigert, Nissl, and Kraepelin. After completing his preliminary work at the Boston City Hospital he began to teach, finally taking over the work in neuropathology at the Harvard Medical School and passing rapidly through the various grades until he was appointed to the Professorship of Neuropathology endowed by Dr. W. N. Bullard, a position which he filled brilliantly until his death, a period of about ten years.

In 1906 Southard became identified with the Danvers Insane Hospital as pathologist and assistant physician and there laid the foundation for his work in correlation and classification of pathological and clinical material. He systematized the work at this hospital; he published many papers; he attracted men to his laboratory and by degrees his influence spread throughout the institutions of the State. He saw the needs and the deficiencies as well as the possibilities of the State Hospitals and began to plan for their development along the broad lines of research. The establishment of the Boston Psychopthic Hospital he had looked forward to with eagerness and faith in its possibilities as a unifying centre for psychiatric investigation both from the clinical and laboratory standpoint. He was made its director when it was opened in 1912, and quickly gathered about him a group of workers, who forthwith became productive. He established a series of publications, and papers by him and his colleagues appeared in rapid succession on all phases of the complicated problems which he had set himself to elucidate. He became identified with the work of the State and in addition to his connection with the Harvard Medical School for many years held the position of pathologist to the State Board of Insanity and the Commission on Mental Disease, in which he was ably assisted by Dr. Myrtelle M. Canavan. In this latter capacity he collected an enormous amount of material and brought order out of the confusion which had hitherto prevailed.

He saw far into the future; he was always planning, systematizing knowledge already attained, and seeing possibilities yet far from attainment. He early recognized the importance of an out-patient department in mental disease and such a department was immediately established at the Psychopathic Hospital at first under the charge, not of a psychiatrist but of a pediatrician, Dr. W. P. Lucas, to the end that psychiatry might be brought into closer union with general medicine. Out of this eminently successful out-patient experiment has developed a social service department under the leadership of Miss Mary C. Jarrett, which has been a pioneer in the socializing of medical and psychiatric problems. With the constantly expanding scope of his ideas he saw clearly the possibilities for good of systematic social service and of late years directed much time and thought to its expansion. The School for Psychiatric Social Workers established at Smith College in 1918, stimulated by the exigencies of the war, was one of his successfully thought-out plans of expansion. He became increasingly impatient of detail as his constructive ideas took form and developed, and was continually projecting larger and more comprehensive programs which, had he lived, would doubtless have effected a far-reaching influence in the social and medical developments of the immediate future. His influence in national affairs was rapidly developing. He was an ardent supporter of the National Committee on Mental Hygiene and was planning an attack upon the ultimate causes of social unrest when his work was interrupted by death. During a part of the war he served as Major in the Chemical Warfare Division, for which his diversified talents and his wide range of scientific attainment fitted him, and within a short time he was appointed chairman of the Neuropsychiatric Division of the National Research Council, a position which would have given his unique capacity for discerning problems and planning means for their solution a broad field of application.

His society membership was, as might be expected, large, and was not confined to his special subject. His breadth of knowledge was such that he could not fail to bring to the deliberation of learned societies of whatsoever character, new and original ideas. He was a member of the Association of American Physicians, the American Academy of Arts and Sciences, the American Neurological Association, the National Association for the Study of Epilepsy, the American Genetic Association, the American Medical Association, the American Medico-Psychological Association, of which he was president in 1919; and of many of the state societies. At the time of his death he was chairman-elect of the section on nervous and mental diseases of the American Medical Association and president-elect of the Boston Society of Psychiatry and Neurology. He was also a director of the Bedford Hills Laboratory Bureau of Social Hygiene, of the National Committee of Mental Hygiene and of the Eugenics Record Office. Unlike many men with large society membership, he took an active part in the meetings of the various societies to which he belonged. He was an indefatigable traveler and reader of papers. His capacity in these directions seemed inexhaustible and, what is more, he always had something definite to say. His productivity was altogether exceptional. He had published in the neighborhood of 150 original papers, had written two books, one in collaboration with Dr. H. C. Solomon, and was projecting many more.

It is difficult at this time to summarize the achievements of such a man. He was a theorist in the best sense of that term; his theories resulted in action. He accomplished in great measure what he had planned. He was an admirable propagandist. Some of his critics have regarded his schemes as visionary and speculative. The tangible results of his activities should be a sufficient refutation of this criticism. He has unquestionably been one of the strong influences in moulding public opinion toward a more rational attitude regarding the great problems of psychiatry and in demonstrating the possibilities of accomplishment in this field, beset as it is with prejudice and ignorance. He was always interested in correlation, logical reasoning and classification. which had recently found expression in his "Key Principle" of diagnosis, and his rearrangement of unrelated clinical groups into a logical order. He was a skilful microscopist and histologist as well as a gross pathological anatomist. He made notable contributions to the histology of the cortex in mental disease, to the study of the various neuroglia reactions, and to lesions of the nervous system in general. His monographic work on feeble-mindedness in connection with the Waverley School for the Feebleminded should be particultrly mentioned in this connection. He did his share toward the correlation of physical defect or alteration with mental changes; he, in fact, approached mental phenomena largely from the anatomical standpoint and had a somewhat secondary interest in the dynamic psychology of the present day. As a teacher he was at times discursive and difficult to follow, but his lectures were invariably interesting and suggestive. He regarded his time and, no doubt, rightly, as too valuable to devote to the individual undergraduate student unless he happened to be of particular promise; on the other hand, as an instigator of research he was preëminent both by example and precept. He was a veritable inspiration to those with whom he was associated in productive work. This constituted his unique power in the community. He was not only a tireless worker himself but he stimulated others to similar effort.

He married Dr. Mabel Fletcher Austin in 1906 and found in her understanding and sympathy a constant incentive to the best work. She, with three children, two sons and a daughter, survive him. E. W. T.

THOMAS AMORY DE BLOIS, M.D.

Thomas Amory DeBlois, M.D., laryngologist, died at his home in Boston February 27, at the age of 72 years. He was the eldest son of John Amory DeBlois (Harvard 1816) and Emily J. (Rousse) DeBlois, of Virginia, of French descent. The father, descendant by birth from an old Boston family, was a cotton merchant in Columbus, Georgia, and there the son was born January 27, 1848. When the boy was only seven years of age, in 1855, the father died and the widow brought her young son to Newport, R. I., where he began his education in a private school. When he was twelve, he went to Vevey, Switzerland, for a two-years' schooling at Pension Sillig, and in 1863, at the age of fifteen, he entered the U. S. Naval Academy at Annapolis, graduating in 1868 as midshipman, advancing to ensign the following year and to lieutenant-commander in 1873. The two years 1875-76 he was stationed at the U. S. Navy Yard at Pensacola, Florida.

Deciding to study medicine, he entered Dartmouth Medical School and received the degree of M.D. in 1878; the same year he took an additional M.D. at the University of New York City, giving special attention to diseases of the throat under the instruction of Dr. F. H. Bosworth. He continued his connection with the Navy until 1881, when he settled in Boston. Before resigning, he started a clinic for diseases of the throat, but was soon ordered South to join his ship for a long cruise. He had not reached the place of embarkation before he decided that medicine had a stronger hold on him than the sea, and on February 1, 1881, he sent in his resignation, returned to Boston and again took charge of his embryo clinic, which had been under the care of a colleague during his absence, who was much surprised to see him return so soon. He retained this clinic until 1890.

Another appointment was as physician to diseases of the throat at the Boston City Hospital in 1884, where he had as colleagues Dr. F. H. Hooper, Dr. J. W. Farlow and Dr. G. A. Leland for many years, giving up only when he had reached the age limit of sixty-four. From 1893 to 1906 he was clinical instructor in laryngology in the Harvard Medical School.

He was elected a member of the American Laryngological Association in 1882 and was its vice-president in 1900. He was also a member of the New England Otological and Laryngological Society, the Massachusetts Medical Society and the Society for Medical Improvement. Being much interested in mechanical appliances of all sorts, he devised a number of instruments for use in his specialty and modified others to meet his own requirements, as he was a man of large frame and many of the ordinary instruments were not well adapted for his use without some modification.

During all these years his interest in naval matters continued and he was associated with Capt. John C. Soley in forming the Massachusetts Naval Militia, the first organization of the kind in the United States. He was also surgeon to the school-ship *Enterprise*.

A favorite recreation of his was fencing, in which he excelled even in his youth, taking a first prize when at the Naval Academy. Later in life he was one of the most expert fencers at the Boston Athletic Association, where his superior skill was recognized by all.

He was of a jovial nature, hospitable, a good raconteur and sociable to a high degree.

He married at Newport, R. I., October 3, 1871, Louisa D. Anderson, of New York, who died in 1910. Surviving him are a daughter, Elizabeth Amory, and a son, Lewis Amory, a graduate of Harvard, S. B., 1899, and now manager of the safety department of the Du Pont Company, of Wilmington, Delaware.

J. W. F.

The Massachusetts Medical Society.

The next annual meeting will be held at the Boston Medical Library, June 8 and 9, 1920. Dr. R. H. Miller, 434 Marlborough Street, Boston, Chairman of the Committee of Arrangements.

OFFICERS OF THE MASSACHUSETTS MEDICAL SOCIETY.

Chosen by the Council, June 3, 1919.

Alfred Worcester, Waltham, President.
Arthur R. Crandell, Taunton, Vice-President.
Walter L. Burrage, Jamaica Plain, Secretary.
Arthur K. Stone, Framingham Center, Treasurer.
Edwin H. Brigham, Brookline, Librarian.

STANDING COMMITTEES.

The first named is the chairman of each committee.

Of Arrangements.—R. H. Miller, C. H. Lawrence, Jr., Donald Macomber, A. W. Reggio, J. B. Swift, K. G. Percy.

On Publications and Scientific Papers.—E. W. Taylor, R. B. Osgood, F. T. Lord, R. M. Green, A. C. Getchell.

On Membership and Finance.—C. M. Green, Algernon Coolidge, Jr., Samuel Crowell, Gilman Osgood, Homer Gage.

On Ethics and Discipline.—J. W. Bartol, Henry Jackson, T. J. Robinson, David Cheever, F. W. Anthony.

On Medical Education and Medical Diplomas.—Channing Frothingham, C. F. Painter, J. F. Burnham, A. G. Howard, R. L. DeNormandie.

On State and National Legislation.—Alfred Worcester, F. G. Wheatley, E. H. Stevens, J. S. Stone, A. R. Crandell.

On Public Health.—E. H. Bigelow, Annie L. Hamilton, E. F. Cody, Victor Safford, R. I. Lee.

OFFICERS OF THE DISTRICT MEDICAL SOCIETIES, 1919-1920.

Elected by the District Medical Societies.

Barnstable.—F. A. Binford, Hyannis, President; C. P. Curley, Provincetown, Vice-President; C. J. Bell, Wellfleet, Secretary; H. B. Hart, Yarmouthport, Treasurer; E. E. Hawes, Hyannis, Librarian.

Berkshire.—E. H. Taylor, Pittsfield, President; W. P. Kelly, Pittsfield, Vice-President; O. L. Bartlett, Pittsfield. Secretary; J. D. Howe, Pittsfield, Treasurer.

Bristol North.—H. G. Ripley, Taunton, President; Sumner Coolidge, Middleborough, Vice-President; A. R. Crandell, Taunton, Secretary; R. D. Dean, Taunton, Treasurer.

Bristol South.—J. A. Barré, Fall River, President; E. P. Gardner, New Bedford, Vice-President; A. J. Abbe, Fall River, Secretary and Treasurer.

Essex North.—J. J. O'Sullivan, Lawrence, President; D. D. Murphy, Amesbury, Vice-President; J. Forrest Burnham, Lawrence, Secretary and Treasurer.

Essex South.—W. T. Hopkins, Lynn, President; R. E. Foss, Peabody, Vice-President; G. E. Tucker, Salem, Secretary; G. Z. Goodell, Salem, Treasurer; C. M. Cobb, Lynn, Librarian.

Franklin.—Charles Moline, Sunderland, President; E. C. Thorn, Deerfield, Vice-President; F. A. Millett, Greenfield, Secretary and Treasurer.

Hampden.—A. L. Damon, North Wilbraham, President; G. L. Gabler, Holyoke, Vice-President; H. L. Smith, Springfield, Secretary and Treasnrer.

Hampshire.—H. J. Rockwell, Amherst, President; S. A. Clark, Northampton, Vice-President; E. E. Thomas, Northampton, Secretary; J. G. Hanson, Northampton, Treasurer; F. E. Dow, Northampton, Librarian.

Middlesex East.—R. D. Perley, Melrose, President; C. L. Sopher, Wakefield, Vice-President; A. E. Small, Melrose, Secretary; Richard Dutton, Wakefield, Treasurer; G. W. Nickerson, Stoneham, Librarian.

Middlesex North.—J. H. Nichols, Tewksbury, President; E. J. Welch, Lowell, Vice-President; J. Y. Rodger, Lowell, Secretary; T. B. Smith, Lowell, Treasurer; P. J. Meehan, Lowell, Librarian.

Middlesex South.— H. T. Baldwin, Chestnut Hill, President; E. H. Bigelow, Framingham, Vice-President; L. S. Hapgood, Cambridge, Secretary; Edward Mellus, Newton, Treasurer.

Norfolk.— F. P. Denny, Brookline, President; G. W. Winchester, Mattapan, Vice-President; Bradford Kent, Dorchester, Secretary; G. W. Kaan, Brookline, Treasurer.

Norfolk South.—E. H. Bushnell, Quincy, President; F. E. Jones, Quincy, Vice-President; C. A. Sullivan, South Braintree, Secretary, Treasurer, and Librarian.

Plymouth.—Joseph Frame, Rockland, President; F. J. Hanley, Whitman, Vice-President; W. C. Keith, Brockton, Secretary and Treasurer.

Suffolk.——— —— —— ——— President; G. G. Sears, Boston, Vice-President; G. G. Smith, Boston, Secretary; D. L. Bristol, Boston, Treasurer; W. P. Coues, Boston, Librarian.

Worcester.—W. J. Delahanty, Worcester, President; F. H. Baker, Worcester, Vice-President; G. A. Dix, Worcester, Secretary; G. O. Ward, Worcester, Treasurer; A. C. Getchell, Worcester, Librarian *pro tem.*

Worcester North.—W. F. Robie, Baldwinsville, President; C. E. Woods, Lunenburg, Vice-President; C. H. Jennings, Fitchburg, Secretary; F. H. Thompson, Jr., Fitchburg, Treasurer; L. F. Baker, Fitchburg, Librarian.

Miscellany.

MEDICAL VETERANS OF THE WORLD WAR.

An association of Medical Veterans of the World War was organized at Atlantic City, in June, 1919, at the time of the meeting of the American Medical Association, and a constitution and by-laws were adopted. About 2800 physicians have already joined and all others who are eligible are invited to join the society.

The constitution states that "The dominant purpose of this Association shall be patriotic service. The objects of this Association shall be: To prepare and preserve historical data concerning the medical history of the war; to cement the bonds of friendship formed in the service; to perpetuate the memory of our medical comrades who made the supreme sacrifice in this war; to provide opportunity for social intercourse and mutual improvement among its members; to do all in our power to make effective in civil life the medical lessons of the war, both for the betterment of the public health and in order that preparedness of the medical profession for possible war may be assured."

The organization of the society provides for state and local organizations wherever the members desire it, and in some states, such as Wisconsin, organization has already been effected. It is desired by the National Association that those who are already members meet together in larger and smaller groups at the first convenient opportunity and effect a local organization, with a chairman and secretary, and also at the next meeting of the state medical society that a place be provided on the program for the Medical Veterans. The organization of the society is based on democratic principles and it is hoped that the members who have already joined will take the initiative and organize their own state and local societies. The National organization will assist by furnishing application blanks and copies of the constitution and by-laws, and, if desired, stationery.

The first things to be done after the organization of a state society is effected is to elect a councilor to the next general council of the organization, to represent the state society at the next annual meeting of the Veterans at New Orleans on the first day of the meeting of the American Medical Association, April 26, 1920.

A badge or button for members of the society is being made and will soon be ready for distribution. Communications may be addressed to the Secretary, Medical Veterans of the World War, Army Medical School, Washington, D. C.

ERRATUM.

The following correction is made of an error printed in an article on Citrate Transfusion published in the Journal on February 5, 1920:

Under *Typing*, a statement was made that Type II may receive blood from Types II, III, and IV. This is an error; Type II may receive blood only from Type II or Type IV. Type III can never be used. The correct statement is:

Type I may receive blood from Types I, II, III, and IV. Type II may receive blood from Types II and IV (not Type III). Type III may receive blood from Types III and IV, and Type IV may receive blood from Type IV alone.

SOCIETY NOTICES.

Boston Medical Library, in conjunction with the **Suffolk District Medical Society**, Medical Section meeting, at John Ware Hall, Wednesday, March 24, 1920, at 8.15 p.m.

Treatment of Hemorrhage, Dr. Roger I. Lee.

Treatment of Myeloid Leukemia, Dr. Francis W. Peabody.

Aplastic Anemia, Dr. Ralph C. Larrabee.

Edwin A. Locke, M.D., *Chairman.*
George R. Minot, M.D., *Secretary.*

The Norfolk District Medical Society.—A regular meeting of the Society, at Masonic Temple, 171 Warren Street, Roxbury, Tuesday, March 30, 8.15 p.m.

Communications:

Shall Sex Hygiene be Taught in the Schools?, Merrill E. Champion, M.D.

Sex Education for Boys, Arthur N. Broughton, M.D.

Sex Education for Girls, Mary R. Lakeman, M.D.

Sex Education at Harvard, Roger I. Lee, M.D.

Censors' meeting, May 6.

Bradford Kent, M.D., *Secretary.*

RECENT DEATHS.

Dr. P. Francis Walker died at his home in Providence on February 27, at the age of 61 years. He was a graduate of the Boston University Medical School, and had practised in Providence since 1881.

The Boston Medical and Surgical Journal

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Addresses.*

OSLER AS A BIBLIOPHILE.

By Edward C. Streeter, M.D., Boston.

In attempting to take a level of the affections of Dr. Osler we will doubtless find that next to the love of men with him came love of books. Throughout his life he revealed the most amazingly vital concern for both—viewing with an equal eye the achievements of the past, and the promise of things of incomparable value and worth in the living present. A measure of the charm which he exerted over living men came from his converse with the dead. He strove mightily to reconcile the prodigals of the present with the forgiving Fathers of medicine—to turn them from husks to their former meat and the paternal blessing. In him the love of good books was a flame, never idle, as in those who have only a vain and prodigal humor for this sort of furniture, never idle for a moment, but was used as a Promethean torch to reillumine the light of old authors, in present danger of failing and passing out. A conflict between the past and the present was inconceivable to him. All that is, is Greek; or, at least, all that is, is derived. This is the ultimate irreducible reality. Acting on this conviction, ''without fraud, cozen or delay,'' he happily brought every student with whom he came in touch into a proper system of relations with the achieving minds, the heroic inquiring spirits of past ages. Early in his course as teacher he faced this august relationship squarely. He became, like Boerhaave, one of the greatest exemplars of the historical method of medical teaching that ever has been. In establishing this method in America he did the impossible, for this is an unhasting, laborious method, little suited to the genius of our people.

Osler had an instinct for revival and the renewal of grace and force in everything that he touched. His range in ordering the topics discussed in the Book and Journal Club was wide indeed—Assyrian Medicine down to the last faintest foot-falls on Cathedral Street. He transmuted and touched to higher issues the choice estrays of medicine, recalled forgotten worthies like Richard Morton and Dover, and regrouped and shrewdly rearranged some of the figures in the old medical hierarchy. He re-invested all his favored ones with historic reality, launched them from his humanity as genuine forces in the world of science, no longer lying in bonds in the imagination of the studious, merely, but redelivered, given voice again in the land of the living. He shared

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* Delivered at a memorial meeting for Dr. Osler held by the Harvard Medical Society, January 20, 1920.

Browning's power, "the life in him abolished the death in things." Servetus reasserted himself through him; Linacre, Fracastorius, Leonicenus and the entire group of humanists, all the master spirits of medicine, Vesalius, Harvey, Hunter, reappareled, "bright-harnessed and in order serviceable." Here was a new way to pay old debts, on a convivial plan, by adopting your creditor, giving him tenant-rights in the very house of life in which you live.

Every English-speaking worker in the medical sciences today has been, in a sense, a student of William Osler, so much so that it will appear the height of folly to attempt to calculate the good which will ultimately come from his revival of the historical method. Neglect of the sources was to him unspeakably shocking. "The beggarly recognition or base indifference" meted out to the men whose minds have fertilized science in every direction in times past, touched him to the quick as an act of ingratitude. Last year in May he shamed the "Greats" in Oxford on this score, using the old clarion tones which he had used with students in Baltimore. He brought the world to book—to a realizing sense of the evolutionary process behind all the swift revolutions of medical doctrine. An evolutionist can no more neglect sources, the original texts and documents relating to discoveries and advances in the science and art of medicine, than a just and loyal soul made perfect could reject the fathers of his fathers. Osler's school deals with the Founders in a spirit of gratitude and loyalty; but only "one whose best friends have been the old humanists," like himself, could link arms and walk away thus familiarly with departed heroes. How tenderly they requited him, their Daysman, we know from his blithe whimsical account of such walks with the great. He speaks of them quite simply—as though he had but walked down Monument Street with President Gilman or Dr. Kelly. Sir William's acquaintance with the medical classics extended over fifty years: in that time he had come to know every primary contribution; every precious accent in the rich and varied utterance.

A "doctor sine libris," such as old Fuller describes, was anomalous indeed; a Caliban in the eyes of this Prospero. "Books are tools, doctors are craftsmen," insisted Osler. "A physician who does not need a library sinks to the level of a cross-counter prescriber." "To study the phenomena of disease without books is to sail an uncharted sea, while to study books without patients is not to go to sea at all." Such was his attitude toward texts in general, the ordinary hand-apparatus of the practitioner, and the vast, limitless library of modern contributions, current accumulations, which he publicly aided so many centres to amass and privately aided so many students to use. "Only a maker of books can appreciate the labors of others at their true value." On the same occasion on which Osler said this (the dedication of the Boston Medical Library), he also said, "I should like to see in each library a select company of Immortals set apart for special adoration." In fact this short address on "Books and Men" is the key speech of his campaign to quicken the study of the classics of medicine. His devotion to this alcove in our libraries was intense enough to have satisfied the quaint author of the "'Philobiblion.'" Osler's high pleadings for the "Princes of the blood," the books born within the purple, are singularly happy products of his mind. "Nay, they do preserve as in a vial," as Milton would say, "the purest efficacy and extraction of that living intellect that bred them." Here he was the marrow of persuasion, as fresh and clear, as witty and winning, as Holmes at his best.

Nor were conditions in this country adverse or hopeless in respect to the gentle art of book-collecting when Osler first came among us. Chadwick, Holmes, Hunt, Treadwell, Bowditch, and others in New England were well launched in this library movement, while in the southern tier of states were Gross, Lewis, Weir Mitchell, Kelly, Keen, Jacobs; in New York, Jacobi and Pilcher. Mightiest book hunter of all was Billings at the head of our National Medical Library, the Surgeon-General's of today.

Many of these men had amassed great store of *rarissimi* and choicest examples of the medical classics, even before Osler made his first tour of study to Boston in 1876. Dr. Kelly says that when he first met Osler in Philadelphia "He stayed to dine in Norris Square, and was particularly interested in my collection of old medical books." What a zest and high appetite for the written record of great minds in all ages was in his guest, not even Dr. Kelly could have pointed out that night. It was quite impossible that anyone who had the tincture of old letters in him, could fail to share Osler's enthusiasm, his inveterate and almost dangerous exaltation in the presence of rare volumes. He had Petrarch's reverence for great books. He loved to see them in reverent hands, in fair estate and comely, yet he loved the "ragged veterans" as well as Lamb did.

The range of his taste at this period, like the breadth of his learning, was astounding. He could say with his mentor, Sir Thomas Browne, "I am of a constitution so general, that it consorts and sympathizeth with all things." His province as a collector lay somewhere between the early manuscript period and the literature on anesthesia—an illimitable expanse—but his day was by no means at the meridian when he began to beat its bounds. He soon laid Europe under tribute. From Poland and Spain and the boot of Italy, and little-searched corners, unknown to those who tramp the main-travelled ways of bookdom, Sir William received his corded bales of Gothic, Bastard, and Black-letter with mysterious regularity. At the same time that he thus eluded the German booksellers, who had cornered the old book market abroad, he let them know his "desiderata," as though it went against the grain to keep his peculiar wants from them. The result was that he often bought of Baer, the Rosenthals, Halle, and Hiersemann, as well as from Rahir, Voynich, and Olschki. He knew them all, even snuffy old Symnes, the expatriated Englishman, whose cramped *boutique,* Rue des Beaux Arts in Paris yielded him material undiscoverable to other eyes than his. Needless to say that he maintained close relations with all the London and Provincial booksellers. These connections were not made for the supplying of his own needs purely. By these means he largely catered to the lean and hungry medical libraries of our country. His gifts to them are past numbering. Fortunately, no recording angel keeps account of the wicked prices men pay for the books which they give to libraries or necessitous scholars, and to their friends. Acquisition for selfish ends is another matter—outraged spirits in heaven keep a double-entry going against such bibliomaniacs, for the heavens are set against hoarding. "*Non mihi sed aliis,*" not for me but for use of others, might have been etched upon Osler's book-plate—it was Savigny's devise but it fits Sir William. And I fancy that the man who had care, up to the outbreak of the war, of Sir William's library at Norham Gardens, Oxford, had all that he could do in just keeping the books together, for the owner had a habit of allocating his best possessions where they could be best used, on the principle that books belong to those who prize them most. You would say that a general thaw and dissolution of his library was in process, but no, quite the reverse. Through this kind of loss comes increase.

His collection of the works of the Founders of British medicine had "reached a large degree of perfection" in 1901, and in the Franklin Street house in Baltimore were richest stores of source-books, association books and classics, Greek and Latin—waiting for the evaluation which the Chief would put upon them Saturday evening. But this library was a modest one, we are told, when compared with the one that he gathered around him after his removal to Oxford.

His old Baltimore pupils and friends, returning home from the pilgrimage to No. 13 Norham Gardens, told strange tales of wondrous new accessions to thronged shelves. The library, grown too great for the lower floors, had mounted the groaning stairs and bid fair to have the run of the rooms above. Books everywhere, invading all the premises. So much for the mass, which, after all, need not detain us, for Queens, All Souls, and Christs are near by, and the Tarpeian mass of books in the Bodley, fifteen hundred thousand of them, is a silencer in this matter. As for quality, there were items, a number of them, in Sir William's collection, aside from his manuscripts, which would make Pollard or Nicholson catch their breath—editions not to be found in the Bodleian or British Museum—and when we've said that, we've said all as to the rarity of a printed volume. But behind all the particular excellencies and fascinating bays and sub-divisions in this particular library, is that ever fresh, radiant, sustained conception, the great plan, fundamentally adhered to throughout half a century of collecting, on which the master's library was formed. To contrive to bring together under one roof-tree the whole array of creators, interpreters, and transmitters of the medical and physical sciences, represented in first editions, is an enormous undertaking. Expand this plan to embrace the idea of the inter-relation of all the sciences and then again expand it to a decorous and necessary purview of all philosophy, history, and the humanities, insofar as, for spiritual purposes, they are seen to be working with a common aim with the sciences, and we have reached a point with Osler from which to view the pregnant sources of the old order from which issue the new. Nothing short of these Pisgah-sights would quite satisfy him. We have the prediction from one who knows, that we will never cease to admire the noble plan on which this library was predetermined and consciously formed. Indeed, one of the unique monuments in the field of medical bibliography will be Sir William's catalogue raisonné of his library. This, if we are privileged to see it in print at some future time, will far surpass anything else of the kind. Sir William had been working on this for some time, and despite a thousand interruptions, portions of it were complete at the time of his death. He had already issued that part which relates to his vast collection on anesthesia, in the Proceedings of the Royal Society. Carried out in that manner, the remaining sections of his catalogue "would have been the most attractive and informing contributions ever made to medical bibliography, bar none." Most bibliographers have, in a supreme degree, "the gift of infrigidation," if I may use a quotation made by him in a recent address in the Bodleian. Only by a big human touch, an all-embracing sympathy, can a mere census of books stir even the modern caddice-worm at work in a library. We can well imagine that Osler's catalogue of his beloved books will be a new revealment, in rich and novel form, of his great humanizing aims and universal sympathies.

OSLER AS HIS STUDENTS KNEW HIM.

By Joseph H. Pratt, M.D., Boston.

Most men held in popular estimation are greatest at a distance, but Sir William Osler was one of those rare spirits who are found to grow in greatness the nearer they are approached. No medical man ever received more tributes of affection and regard from his professional brethren during his lifetime than did Dr. Osler and certainly the death of none was ever mourned so sincerely by such a host of friends. He was a many sided man with many ties and affiliations. In him the medical profession in Canada, in the United States and in Great Britain has a common bond.

When he left Montreal for Philadelphia he was only thirty-five, but he was held in such affectionate remembrance by the teachers and students of McGill that his first door plate was obtained and placed among other treasures in the college building. He went to Philadelphia a stranger, but to alter slightly the words of S. Weir Mitchell's poem, he found there a second home, and in the practice of life's happiest art, he little guessed how readily he won the added friendship of an open heart.

When he went to England to become Regius Professor of Medicine at Oxford he left behind him a "continent of friends". Five hundred medical men from all parts of the country gathered at Delmonico's to sit with him at a farewell dinner.

He was at Johns Hopkins when that hospital was opened, then the medical wonder of the New World, and studied the first patient admitted to the wards. Here he developed one of the best medical clinics in existence and introduced far better methods of practical instruction than the German clinics afforded, for up to that time first-class clinics in the modern sense were found only in Germany. He was thirty-nine years old when he went to Baltimore and here came to full fruition the seed that had been planted in his fertile brain during the previous twenty years. In 1892 he published the first edition of that text-book which has been ever since the standard work of medical practice. Eagerly he must have awaited that first class of undergraduate students in the fall of 1905. For six years he had had to content himself with what he called the "dry husks" of graduate teaching.

The picture of Osler as he appeared to a student of the early years has been faithfully drawn by Thomas R. Brown, a member of the pioneer class at the Johns Hopkins Medical School. That was as he says a truly golden age to those whose good fortune it was to belong to one of the early classes that received inspiration and instruction for mind, heart and soul from this great teacher. Dr. Osler made his class feel that he was a fellow student; or as he himself styles it in one of his essays "a student teacher": simply a leader in the search for truth in the open book of nature. He had a keen enthusiasm for new knowledge and had preserved in a remarkable degree the freshness of youth. His attitude to his students was the same then as it was many years before when he said in an introductory lecture at McGill, "You come now into the society not of mere professors, who will lecture at you from a distance, but of men who are anxious for your welfare, who will sympathize with your difficulties and also bear with your weakness". ******* "Look upon us as elder brothers to whom you can come confidently and fearlessly for advice in any trouble or difficulty".

At Baltimore in addition to the weekly amphitheatre clinic he gave bedside talks in the wards and observation clinics, as he termed them, in a small class room attached to the dispensary.

These observation clinics were delightfully informal and in no other place did his great ability as a teacher show to better advantage. Here the junior students, the infants, as he called them, came under the spell of his wonderful personality.

He was of medium size, but well built and graceful in his movements. His complexion was sallow, almost olive hued, possibly an inheritance from Celtic ancestors. His eyes were luminous and searching, but often twinkled merrily. He wore a rather heavy drooping moustache which partly concealed a strong mouth. A study of his photographs show that his expression in repose became more genial as he grew older. In his earlier pictures his face is rather stern. He himself said that sobriety was reflected in his fascies. His hands and wrists were unusually well formed and how effective and characteristic were the gestures he made with them!

In the clinics he spoke often of men and books, especially old books, the medical classics. As he had a wonderful sense of proportion, of the part to the whole task in hand, he would simply throw out suggestions in a few words, but they made a deep impression on his students. In looking over my note books I find that at his very first meeting with our class he spoke of Skoda's Physical Diagnosis, and said it was a good book to pick up in old book stores, and remarked that an Auenbrugger was very difficult to obtain. Copies of Laennec in English he told us could be found without difficulty. He had a wonderful gift in his ability to bring out of the shadowy past men who had done things in medicine and of changing, as if by magic, unfamiliar names into real persons who excited interest and admiration. Probably it was not later than the first week of our course that we were thus introduced to William Heberden, the English Celsus, and told to read his commentaries, to look him up in the Index Catalogue, and that Buller wrote his life.

Dr. Osler was "a specialized generalist and a generalized specialist" in medicine, to quote his own designation of Jonathan Hutchinson. No matter what disease was the subject of demonstration and discussion he showed such familiarity with it and such enthusiasm, as well as an ability to give a concise statement of practically all that was to be gleaned from the literature, with titles and names of important papers, that it seemed as if this was the one disease that had interested him most. At the next dispensary clinic another and totally different disease would by chance be found and regarding this his knowledge and his interest would be equally great; and so through the year, until it seemed that all diseases were his specialty.

In examining patients he emphasized inspection above all the other physical methods. I think he liked it best, and it is true that he could often make a diagnosis at a glance, although he of all men abhorred a snap diagnosis. He had a thorough knowledge of skin diseases and studied with great care scores of cases of erythema and purpura. He dictated careful notes on the important features of a case.

He always was most punctual. In the early summer he would begin ward rounds at 8 A.M and was often in the wards before the students arrived and sometimes before the house staff. Most of the two hours' visit would be devoted to two or three cases—rarely more than four.

His ward talks were more logical and better planned than most amphitheatre clinics. Nothing was allowed to interrupt him. A distinguished colleague from another city might enter the ward and join the group about the bed, but there was only a nod or smile of welcome, no break in the talk or examination. The visit to the ward finished, he would seize the visitor's arm and give his attention completely to his guest.

There was a quiet dignity about him that held a certain type of familiarity in check. One day as the class was leaving the ward a patient in a bed near the door called out, "Good morning, Doc." Doctor Osler made no comment then, but when the corridor was reached and we were out of the man's hearing, he stopped and turned to the students and said, "Beware of the men that call you Doc. They rarely pay their bills."

Of his kindness to students much might be said. He had a warm interest in them all, even when they were unknown to him personally. I remember well my first meeting with him. It was before I had begun clinical studies. One afternoon during vacation I was reading in the Library of the Medico-Chirurgical Faculty. There was no one in the room except the librarian and myself. Dr. Osler entered and spent a little while looking over the new journals. After chatting a minute with the librarian he left, but before doing so he came over to where I was reading and spoke a few words to me; no joke, no epigram, words from him unusually commonplace, but the fact that this great man showed by his manner and act a kindly interest in a strange student made a deep impressoin on me and warmed my heart.

Before the day of the famous Saturday evening conferences around the big table in the Oslers' dining room which Boggs has so well described, it was Dr. Osler's custom to invite some of the fourth year students to dinner, two at a time. I went with my classmate Schenck. Being so familiar with two of his earlier essays that I knew them almost word for word, I thought he would probably talk as he wrote of Sir Thomas Browne, Plato, and other immortals, who were not of my ken, and I felt ill at ease at the conversational prospect.

He had the happy faculty of putting everyone at his ease instantly. I can see now in my mind's eye, as clearly as if it were yesterday, his entrance to the room. He came quietly, but with a gay air and humming a tuneless tune, his hand outstretched. There were no conventional words of greeting, but an inquiry: "Schenck, what is the name of that pretty nurse who is looking after your patients in Ward F?" There was a common ground of interest after all and my fears were at once dispelled.

Unlike Homer, Dr. Osler was never caught nodding. He lived in the present with all his faculties alert and fixed on the matter at hand. His mind never wandered although he could do two or more things at the same time. When he walked down the street he saw everything in it although he might be engaged in an interesting talk with a companion all the while.

The hospitality extended at his home in Baltimore and later in Oxford was boundless. As Dr. Thayer has said, his wife had a heart as big as his own and made their tea table a mecca. Mrs. Osler never knew how many men he would bring home for luncheon. It might be only two or it might be six. One of the townspeople, amazed at the quantity of food she bought at the market, thought she must be ordering for a hotel.

Living entirely in the present, he was able to preserve his serenity of mind in a way that was most unusual. I chanced to be in Baltimore on the day he left the home at 1 West Franklin Street for the last time and he invited me to tea. The house was largely dismantled. Packing cases stood in the living room. In a small room in the rear of the house tea was served. Although a carriage was waiting at the door to take him to the station there was no sign of haste and he talked gaily and interestingly with no apparent thought of the morrow and of the sad fact that he was leaving that home of a thousand delightful memories never to return.

He appreciated the virtue of equanimity and selected it as the title for his first volume of collected essays. He showed the worth of his doctrine even more eloquently in his life than in his words. When his humorous reference to chloroform was so heartlessly misrepresented by the press of the country that he became the target for general abuse he did not lose his equanimity or imperturbability. Even those in his own household did not know at the time how keenly he felt it. About two weeks after the delivery of the address that made his name known to everybody that read a newspaper he wrote me, "I hope you are hurrying, as the years are flying and you will soon be forty." The following week when I saw him in Baltimore he referred to his experience, but not in a serious way. "It is not pleasant," he said, "to awake in the morning and find yourself, not famous, but infamous." He also remarked that, "the way of the joker is hard. I deserve to have been caught long ago."

His jokes were always kindly. He never willingly hurt a brother's feelings, and all men were his brothers. If a stray arrow of wit did cause pain to anyone he regretted it keenly. He was generous of praise, rarely criticized, and never spoke unkindly. He would never allow anyone to censure in his presence a fellow practitioner of medicine. There was a legend that on the sideboard in the Oslers' dining room there was written in invisible letters this motto: "If you cannot say anything good about a man, say nothing." The admonition to judge not he strictly followed. McCrae tells of the emotional patient to whom he had spoken in a kindly way of the need of self-control. At once the tears began to flow and she exclaimed, with emotion, "Oh, Dr. Osler, you misjudge me cruelly." "Madam," he replied, with a serious voice, but with a twinkle in his eye, "Early in life I learned never to judge any woman and that rule I have strictly kept, therefore I could not have *mis*judged you."

His generous aid was extended to all within the medical profession, including some that must have been unworthy. One day I met at the front door of the hospital a shabby old man, a doctor without patients, who was earning money, he said, to help put his son through a Baltimore medical school by taking subscriptions in advance for a book he was writing. He showed me the list of names he had secured. "There is a man," pointing to the name of Dr. William H. Welch, "who took a copy, although he said he did not practise. And what do you think? Dr. Osler wants five copies. 'Why, Dr. Osler,' I said, 'what will you do with five copies?' 'Oh, I want to give them to my friends,' he said."

Although always a friend of the old, to him there was no sadder picture than the man who had outlived his usefulness in professional work. Following his own admonition as he travelled farther from the East he kept his face toward the rising sun.

He never lost that fine enthusiasm of youth. How many men of 69 could write as follows: "Did you know that I made a great haul of Withering's letters, etc. A man came in one day with a bag and said, 'Are you interested in Withering?' I said 'Rather,' and he pulled out a big bundle of letters and papers from 1764 to 1794 (?) and an Edinburgh diploma. I offered him twenty pounds, at which he nearly expired, as he had hoped for not more than five pounds. I should have gone to double at auction. I have them all in chronological order and beautifully bound."

In looking over his letters I find in recent years his son's name frequently mentioned. In the spring of 1914 Revere passed his entrance examinations for Oxford. He had grown to be a young man after his father's heart, a devoted student of all that was best in literature. Sir William Osler was a victim of the war. He came of long-lived stock and had great natural vigor of mind and body. But the loss of his son and only child was a blow from which he never recovered, although he bravely "carried on" until the end. In the silent watches of the night he must have been with his boy living over the past. As Mr. Martin says in his fine tribute, "Life here was not the same to him as it had been, and where his treasure was, there it seemed his heart inclined to be."

"He leaves behind him freed from grief and fears,
Far nobler things than tears,
The love of friends without a single foe,
Unequalled lot below."

OSLER IN THE EARLY DAYS AT THE JOHNS HOPKINS HOSPITAL.

By W. T. Councilman, M.D., Boston.

I have been asked to speak of Dr. Osler's early work in Baltimore and this necessarily includes some consideration of the formative period of the Johns Hopkins Hospital and Medical School with which he was closely concerned. Probably the primary distinctive feature of the hospital which placed it at the foundation in a different class from all other hospitals in the country, which has most contributed to its extraordinary success and to its reputation as the leading hospital in the world, is the close union with the university. The will of the founder instructs the trustees "in all your arrangements in relation to this hospital you will bear constantly in mind that it is my wish and purpose that the institution shall ultimately form a part of the medical school of that university for which I have made ample provision in my will." Both the university and the hospital had the further enormous advantage of development without traditions, without the dead hand of the past constantly reaching out and choking aspirations. Traditions are formed by men and environment into which many circumstances often imperfectly appreciated enter; men no less than environments change and it is often difficult to realize that past experiences, though valuable, should not dictate the direction and the path for future progress. In the formation of both university and hospital, it was recognized that no existing institutions in the country offered examples to be followed, that the ideals were different and that the methods by which these ideals were to be attained must differ. The university met with instant success. It found ready for it a remarkable faculty of young men who pressed eagerly forward. It is probable that such men are always to be found but to recognize them and to give them confidence demands vision and that the president of the university had.

As we look back upon it, it seems on the whole fortunate that the building of the hospital and its opening was so long delayed. This gave opportunity for the university to create an atmosphere and to extend the ideals which governed it to the hospital and the future medical school. Three subjects, physiology, anatomy, and chemistry, which are recognized as basic for medical studies, were among the earliest subjects in the university work, and in 1884, by the appointment of William H. Welch, pathology was added. This was the first recognition of pathology as a university subject and as a branch of science independent of its relation to medical teaching. The locus for the new subject was on the hospital and not the university grounds, a small building designed primarily as the autopsy theatre of the hospital being fitted as a laboratory. I had returned from study in Germany in 1882, was given a minor appointment in the university, had certain positions which gave opportunities for pathological study and did some desultory teaching. We moved into the hospital laboratory in 1886, and there soon gathered a small and enthusiastic group of workers, the most prominent of whom were Halsted and Mall. There was much conjecture as to the character of the new medical school, the creation of which was believed to be imminent, much curiosity as to what was already in existence, and visitors were many. How well I remember these visitors and the trips which Dr. Welch and I used to make with them through the hospital buildings then nearing completion; he usually explaining the heating, while the more obscure and intricate ventilation fell to my part on the ground that I had more imagination.

I had often heard of Dr. Osler (Sir William does not come to me readily) from Canadians whom I had met abroad and from others, and met him at the first meeting of the Association of American Physicians in 1886, where I read a paper on the malarial parasite. He took part in the discussion and disagreed as to the pathological significance of the changes seen in the red blood corpuscles, a view which he quickly gave up, and he afterwards played a leading part in forcing the recognition of the true nature of malaria. He had at that time been for two years in Philadelphia and was generally regarded as a man whose past accomplishments and promise for the future placed him in the first rank in medicine. He had graduated in 1872, had studied with good men abroad, was an indefatigable worker, and he found or created in Montreal opportunities for work of which he took full advantage. He also was fortunate in that he could develop independently, for neither in Montreal, Philadelphia or in Baltimore were there precedents for the character of the work he set out to accomplish nor models whom he could follow. He found his first opportunity in Montreal as the pathologist of the Montreal General Hospital and in teaching pathology in McGill University. While there he published two volumes of pathological reports from the hospital which are models of such work. His first opportunities for clinical study came from the position of physician to the smallpox hospital, and afterwards he was given a summer term of service in the Montreal General Hospital. His industry was prodigious. He published a great number of papers, chiefly reports of cases, some of them individually, others in association with some physician who had clinically studied the case. All of this work was well done, the description objective, clear and simply expressed, the literature considered and the status of the condition or disease in relation to analogous conditions established. Probably no medical man has lived who has written so much and on so many subjects in medicine as has Osler, and in his later work he does not depart materially from the method which characterizes this early work. He was not a product of the laboratory, but he made use of the facilities of the laboratory to extend his studies of questions primarily derived from individual cases of disease. So far as the laboratory could throw light on the phenomena which the case presented, he used it and left to others the study by experiment of the more general and underlying questions of disease. If he had any models they were the old English and French masters rather than the Germans. Like these men he closely united pathological anatomy and clinical observation. A well-trained pathologist and a good anatomist, he made his own autopsies, directing his research to conditions which would elucidate the clinical phenomena. It is a method which would be dangerous to a man of less intellectual honesty, for there would be a temptation to project his previously formed conceptions into his observations of objective conditions, to see what he thought should be found rather than the actual conditions. For Osler, as for Laennec, it was the best method, and the individual case of disease became clearer and more vivid by this unbroken study. No one can read Laennec's wonderful description of tuberculosis of the lung without a realizing sense that the description of the lesions is his own, and that the same is true of the description of the anatomical lesions of disease in Osler's textbook.

There was a long period of waiting for the opening of the hospital after its completion and a still longer period of waiting for the medical school. Pathology as a branch of university work was represented on the hospital grounds by the pathological laboratory, in which was an able and enthusiastic band of young men who found there opportunity and stimulus which did not exist elsewhere. The names I recall are Halsted; Mall, the first fellow in pathology; Russell, who received the first P.H.D. ever given in pathology; Sternberg, then, as ever, an untiring worker; Abbott, Thomas, and Gavin. Lectures at the university and post-graduate courses were given. It was finally resolved that the hospital, but without a medical school, would open in 1889. Osler was appointed in 1888, and the hospital opened in May, 1889. I had gone abroad in 1888, and when I returned in July, 1889, the hospital was actually in operation and I was made resident pathologist and assistant professor of pathology. The opening of the hospital did not make any marked change; it merely expanded our life, gave more material for work and more workers, brought new questions before us; but the steady scientific study of disease by observation and experiment went on as before. I remember Osler so well at this period. He was then not quite forty and looked younger, a well-knit but rather spare figure, of about the average height, a rather long moustache, the position of the ends of which seemed to vary with his mood, hair even then a little sparse, a clear but rather sallow complexion, a broad forehead, good eyes, and lively expression. I think that a stranger with good knowledge of men would have thought him from appearance interesting and been attracted by him. His clothes were always simple and worn well and he fancied cravats of rather striking color. At first, with the exception of Welch and Mall, we all lived in the hospital, our rooms in the main building were capacious, comfortably furnished and the outlook over the city and harbor was fine. No one of the small group of men who participated in the hospital life at this early period can forget its fascination. When the hospital was first opened it was not possible for the chosen superintendent, Dr. Hurd, to immediately assume his function and for some weeks Mr. Gilman acted as superintendent even to the extent of catering. Finally a very amusing and interesting man, Emory, who had large experience, was chosen as caterer and the hospital table left nothing to be desired. Emory was always in hot water with Miss Hampden, the head of the training school; refused to regard the nurses seriously, spoke of them as nurse girls, and it gave us great delight to add fuel to the flame from two directions; in fact, it must be truly said that we sometimes sought through Emory to express our own feelings. We breakfasted together, then each sought his particular duties, to meet again at luncheon. The luncheon hour, at which most of those working at the hospital gathered, was the most delightful of the day. Osler, Welch, Halsted, Mall, Lafleur, and with the usual visiting stranger, sat at a table in the end of the dining room. The conversation was always lively and interesting, everyone sought to bring something to the feast. There was talk about work, jokes and laughter. A favorite game in which Osler rather excelled, his early experience with Edgerton Y. Davis and the Connewanga Indians having given him previous practice, was to relate the impossible and to lead up to this so skilfully through the fact that the line between fact and fiction was obscured. It was very well for us who knew the game, but occasionally it would be played when the serious visitor was present and he often carried away with him striking information of new facts in medical science. The exchanges between Osler and Halsted were always a delight and we all sought to get something on the other. I remember once that I had gone to Philadelphia to read a paper on a subject in which we were all interested but unfortunately I had mistaken the date by a week, at that time not being accustomed to think of evils long in advance. I was naturally somewhat fearful of the fact being ascertained and the first thing the next day, Osler asked me about the paper, how it had been accepted, what was the discussion, etc. I rather welcomed the opportunity to get the matter over with and spoke of the enthusiastic reception accorded the paper and gave at some length the discussion upon it. "What did Wilson say?" asked Osler, and I thought it well to put Wilson in opposition and gave as well as I could his opposing argument. "Yes," said Osler, "Jim Wilson spent last night with me and said he immensely enjoyed your paper but he could not quite agree with you."

There was an extraordinary stimulus in the atmosphere of the place. Halsted was applying the knowledge which his experimental studies of wound healing and of the principles of antiseptic surgery had given him. Kelly was developing his extraordinary surgical skill in his particular field of operation, in the wards a thoroughness in the study of the symptoms and the products of disease never previously seen was being carried out. Thayer had turned from his work in the Vienna clinics and brought with him the new methods of blood examination. The field of work seemed new, there was nothing routine and uninteresting, and the men felt themselves to be pioneers and discoverers. There was no separation of interests in the small community, the common life brought all interests together and each learned from the work of others. I do not think it would have been possible for the pathological laboratory to have continued its work with the same vigor had it not been that the hospital clinic introduced into it the more vivid human element.

As I look back upon this wonderful life, it does not seem to me now that the men, with the exception of the great leaders, Osler, Welch, Halsted, and Mall, were possessed of unusual attainments, although they were all picked men and the material for choice was country wide. The hampering externals of life, the cares, the thought of the morrow, were all absent. I remember what a strong impression it made on Dr. Fitz, who once spent a couple of days with us and who said it was a monastery with the unusual feature that the monks cared nothing about the future. Osler was active in everything, in the wards, at the autopsies, in the laboratory, and was always ready to speak and discuss in the hospital medical society and in the historical club which were early inaugurated. At the autopsies, he was stimulating and of great assistance; he closely studied the anatomical relations and the character of the gross lesions, often recalling analogous conditions he had seen or referring to descriptions given by others. He was never greatly interested in the finer histology of the lesions unless the microscope gave further knowledge on that particular case. He was generous in the use of the clinical material, only desiring that it should be used to the best advantage in furthering medical knowledge.

Teaching was carried on, men came to work in the hospital wards and in the laboratories and definite courses of post-graduate instruction were given. There was no attempt to secure students, certainly none in the laboratory; rather an attempt to repel them. The man who came to work was not particularly encouraged in the beginning. He was given opportunities and shown methods and the encouragement came only after he had shown his zeal, industry and ability.

Osler ceased to live in the hospital in 1890, his niece, now Mrs. Abbott, caring for his house on Monument Street. I left to come to Boston in September, 1892, and the medical school was opened in the fall of 1893. My leaving for Boston had some connection with the opening of the medical school which I have never seen referred to. Both Welch and Osler had become very restive under the delay in opening the school. The position here was offered Welch and he was able to use the offer to accelerate the formation of the Baltimore school. Here again, just as in the case of the opening of the hospital, the delay seems to me to have been fortunate. Nothing essentially new in ideals or methods came with the opening of the school; Osler, Welch, Mall, Halsted, and Kelly were there and their work was established. The opening of the medical school simply brought more young and enthusiastic workers and more widely extended the influence of hospital and laboratory ideals and methods. The faculty remained a small body of distinguished men, with confidence in each other and the authorities of both hospital and university gave them free hand. With a medical school developing in this way, the true ideal of teaching,—that of the development of the power of the student, by stimulation, by the constant exercise in the methods of science, by letting him ascertain the limitations and the questions to be answered,—was necessarily followed. The student quickly learned that his teachers were themselves students, who merely led and helped him to follow in the path they were treading, that he must always remain a student, that knowledge must be sought but it is never attained and that there is joy in the quest. The utterly false idea of teaching,—that it consists in passing to the descendants the accumulated knowledge of the ascendants—could have no place in such an institution. In the group of great men who set this work in being, all were different, each had certain qualities which seem to us now to have been essential to the completeness of the whole. The great contribution which Osler gave in addition to activating and strengthening all the qualities of the others, for he possessed something of them all, was his humanity, his love and sympathy for his fellow man, and all things else without this are dust and ashes.

These great qualities of Osler made it possible finally to reconcile both university and hospital to the people of Baltimore, so that they should give them confidence and affection. The opposite was the case in the beginning and it was by no means unnatural. The founder, a miser and usurer, had not endeared himself to the community and a number of the trustees were members of a strict religious sect which was not popular among easy-going people who preferred a less strenuous religious faith. They believed, moreover, in the protection of home industries, and when university and hospital opened without any representation of home talent among the chief men appointed, the feeling of enmity was increased. There was also an orthodox way of doing things which was not followed,—no prayer was said at the opening of the university and no ceremony at all marked the entry of the hospital into medical function. There were five medical schools in the city, resulting in the division of the profession into as many hostile camps, all the members of which extended any remaining hostility to the Hopkins institutions. One of the trustees of the hospital it is true did bestow upon it a huge and dreadfully inartistic religious statue which did something to allay the feeling that religion had no place in it. But it was the charm of Osler that overcame all the opposing feeling. He showed both people and profession that all work was for the common good and that in striving for this end each would help the other. All learned to love Osler and through this, the general good will towards each other increased. If it be considered a weakness, Osler had the weakness of desiring the admiration and affection of his fellows, and he was never niggardly in giving this to others. It must not be supposed, however, that in seeking this he was all things to all men. Though loath to recognize evil, he assailed it when it raised its head, and his blows were lusty It is doubtful if any one has been more greatly loved by all with whom he came in contact, and he has used their love not for self, but to advance unity, peace and concord among all men.

Original Article.

RENAL FUNCTION IN VASCULAR HYPERTENSION.

By James P. O'Hare, M.D., Boston.

[From the Medical Clinic of the Peter Bent Brigham Hospital; from study made under grant from Proctor Fund.]

The diagnosis "vascular hypertension" is appearing with ever-increasing frequency in our hospital records. The practitioner, however, rarely recognizes this complex as a distinct entity. He continues to call all cases of high blood pressure with albumin and casts in the urine "chronic nephritis." Patients are repeatedly coming into the hospital after an insurance examiner or the family physician has diagnosed "chronic Bright's disease" on the basis of these three findings. Not infrequently, too, our own cases diagnosed chronic nephritis a few years ago are returning with practically the same picture as on previous admission. They may be somewhat more dyspneic and the heart perhaps a little larger. The blood pressure, too, is probably somewhat higher, but the renal function has not been changed and is practically normal as at previous entries.

Now, had our original diagnosis been correct, we should expect quite a different patient; one with at least some toxic symptoms and a much reduced function. Chronic nephritis, as a rule, is a progressive disease. The rate of progress varies greatly in different individuals,—varies with the degree of the original damage, the presence and type of the infectious foci in the body, the frequency and type of intercurrent infections, etc. It must be admitted, however, that there may be stationary periods in the disease, where we can measure no change in its progress.

1. In the early stages of a chronic nephritis following a long continued acute nephritis we often are unable to measure any change during a long period of observation. This is doubtless due to the balance between destruction and repair. These patients, as a rule, show little or no hypertension.

2. In the late stages the lesion may become quiescent leaving a kidney much reduced in size and, of course, with a low renal function. The blood pressure is elevated in such a nephritis. Frequently, however, the blood pressure is higher in the vascular hypertension case. It is not possible to confuse the cases mentioned in 1 and 2 with the type case we are considering.

3. There is, of course, the remote possibility of a cessation of progress in the nephritic lesion at any stage, if the irritation ceases. However, there should be no difficulty in differentiating such a case from one of vascular hypertension. In the chronic nephritic, if the blood pressure is raised, the renal function is reduced. When the pressure is as high as that in the usual vascular case, the function is much reduced if it is a case of nephritis.

It is very important to differentiate vascular hypertension from chronic nephritis for many reasons. From the diagnostic viewpoint, it is essential to remember that while both may show albumin and casts—denoting renal damage—the lesion in the kidney of the vascular hypertension case is very slight and confined chiefly to the vessels, while in the chronic nephritic the process is largely in the renal parenchyma. Furthermore, this latter lesion is usually progressive, whereas in the former the disease in the renal vessels is stationary or so slow that its progress can scarcely be recognized. The renal vascular disease certainly plays but little part in the death of the individual.

It is even more important, from the viewpoint of prognosis, to recognize the "vascular hypertension" case. The great majority of these patients die from cerebral hemorrhage. Some die from cardiac disease. In only a few does the disease of the renal vessels become so great that the parenchyma is progressively reduced and uremia supervenes. It is surely our duty to the patient, to the patient's family, and to ourselves to recognize that the chance of sudden death from cerebral hemorrhage is very much greater than death in uremia.

The treatment, too, of "vascular hypertension" has often been unnecessarily rigorous because of the mistaken diagnosis. Many of these patients are made miserable by purging, sweating, prolonged low protein diet, etc. There has been no evidence brought forward as yet to show that these procedures are of direct benefit. The low protein diet by its indirect effect of limiting the total food intake may be beneficial. But there is no evidence that in itself it lowers blood pressure or improves the symptoms. Furthermore, these patients have no difficulty in excreting nitrogen unless the process has extended in to the renal parenchyma. I realize that some proteins may be more harmful to these "hypertension" cases than others. At present, however, we do not know which are the harmful ones to be restricted.

In view of the above, I think it is most important for us to differentiate vascular hypertension from chronic nephritis. Moreover, it is so easy that no one should be excused for error except in the rare border line case.

The vascular hypertension patient can be recognized clinically, by his characteristic healthy appearance, by his lack of pure renal symptoms, and by routine physical and laboratory examinations. He can be recognized more surely and more readily by the tests of renal function. The chief purpose of this paper is to appeal for the

			Urine					Two-Hour Test			
Med. No.	Age	Blood Pressure	Spec. Grav.	Alb.	Casts	Phth.	Blood Ur. N.	Water	Night Vol.	Salt	Nitrogen
5395	42	217-122	1008	0	rare	44%	15	normal	540	fixed*	normal
			—	—							
			1015	spt	hyal.						
6482	42	158-100	1014	spt	rare	54%	9	normal	292	normal	—†
			—								
			1029		hyal.						
6506	52	225-130	1011	spt	rare	50%	17	normal	571	normal	normal
			—								
		210-120	1013		hy. and gr.						
6538	21	206-144	1018	0	rare	59%	12	normal	365	normal	normal
			—	—		58%					
		190-92	1022	spt	hy. and gr.	51%					
6567	51	210-110	1013	spt	rare	52%	13	normal	563	normal	normal
			—	—							
			1018	st	hy. and gr.						
6596	47	250-125	1011	0	0	52%	9	normal	357	normal	normal
			—	—				±		±	±
		210-130	1026	spt			12				
6768	35	180-120	1009	0	rare	53%	8	normal*	647	normal	normal
			—	—							
			1021	spt	hy. and gr.			±			
7024	65	220-110	1010	spt	0	53%	13	normal	477	fixed	normal
			—	—							
		160-95	1042	vst						±	
7135	42	310-	1019	vst	0	70%	15	normal	398	normal	normal
			—	—			16				
		220-130	1033	st				±		±	
7211		152-90	1007	0	0	69%	14	normal	549	normal	normal
			—								
			1027								
7225	47	220-120	1008	spt	rare—	68%	15	normal	636	normal	—
			—		mod.			±			
		188-110	1027	st	hy. and gr.						
7322	36	250-140	1007	spt	rare—	47%	9	normal	314	normal	normal
			—	—	many					±	±
			1018		hyal.						
7423	41	245-130	1009	st	0	51%	16	normal	345	normal	
			—							±	—
			1034								
7464	53	230-185	1011	spt	rare	60%	10	normal	853	normal	—
			—								
			1026		hyal.						
7494	60	215-110	1014	0	0	45%	—	normal	528	normal	—
			—	—	—					±	
		196-90	1028	st	rare						
7604	42	250-	1009	0	0—	63%	11	normal	599	normal	—
		205-115	—	—	many	70%					
		204-110	1027	spt	hyal.						
8533	22	152-64	1010	0	0	70%	13	normal	397	normal	—
			—								
			1026								
8742	52	200-120	1020	0	0	70%	13	normal	750	normal	—
			—							±	
			1032								
9290	25	212-150	1009	0	0	61%	12	normal	400	normal	—
			—	—							
			1024	spt							
9465	29	194-100	1011	0	rare	72%	14	normal	493	normal	—
			—								
			1026								
9791	54	190-108	1012	0	0	60%	10	normal	313	normal	—
			—								
			1027								
10654	43	194-118	1019	vst	0	52%	14	normal	447	normal	—
			—								
			1038								
Miller	51	270-	1013	spt	rare	—	9	normal	822	normal	—
			—		hyal.			±			
			1021								
Everson	34	194-100	1008	0	0	72%	14	normal	493	normal	—
			—								
			1022								
Stone	50	196-120	1007	0	rare	64%	12	normal	590	normal	—
			—							±	
			1022								

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* Did not eat all his diet.

† Nitrogen determinations were not done in all cases because present and past experience has led us to feel that early disturbances in the kidney showed themselves more readily in salt excretion than in nitrogen.

use of this diagnostic measure in all doubtful cases.

Twenty-five cases of vascular hypertension are being reported here to show how readily the functional tests in common use establish the diagnosis. The urinalysis is included because in these cases it resembles closely that of the patient with nephritis, and yet it may show certain elements which would lead one to suspect the true diagnosis.

The urinalyses in the accompanying table show that albumin and casts occur about as in chronic nephritis. But there is one rather striking diagnostic difference. The maximum specific gravity is ordinarily much higher than in the patient with nephritis. In other words, the vascular hypertensive kidney maintains its ability to concentrate, in contrast to the nephritic kidney.

The table includes the three tests of renal function in common use. As can be seen, these show pretty nearly normal findings. These cases have comparatively little trouble in excreting phenolsulphonephthalein. Many show an absolutely normal response. Most of the others excrete between 50% and 60%. Only four put out between 40% and 50%. This we regard as pretty good function in comparison with that of the true ''interstitial'' nephritic. We do not claim, of course, that these kidneys are absolutely normal. In many cases there is a slight depression in function. But the great contrast between the nephritic and the vascular hypertension case can be seen if we compare two with the same blood pressure: let us say a systolic of 220. The vascular case may have a nearly normal function, a phthalein of 55%, a blood urea nitrogen of 16, and a two-hour test with perhaps a slight increase in the night volume. The truly renal case on the other hand would probably have a phthalein in the neighborhood of 10%, a blood urea nitrogen of 40 mgms., and a very abnormal two-hour test.

The blood urea nitrogen in our cases are all within the limits of normality, except three. These three probably have a slight difficulty in handling the nitrogen of the diet. A low protein diet in these patients for a few days would undoubtedly bring the blood urea nitrogen within normal limits.

The two-hour test* shows similar findings. In this test the normal kidney responds to varying amounts of water, salt, and nitrogen ingested at meals by varying the total amount and the concentration of these substances excreted in the urine, as measured by two-hour specimens during the day. The volume of the night urine should be normally 600 cc. or less, with a comparatively high specific gravity (1018 or over). The abnormal kidney shows no such variation in volume, amount, and concentration, and these are more or less fixed. The night volume is increased above 600 cc. and the specific gravity of the night volume is lowered. As can be seen in the table, our cases were on the whole pretty normal in renal function and urine. About the only abnormality of note is that many show a somewhat increased night volume. This is of interest because the greater this night volume the greater the renal damage (if the test is properly carried out). If the night volume is much increased, therefore, it indicates a possible renal outcome. Some of our cases seem to be of such a type.

The Table can briefly be summarized by stating that in vascular hypertension

1. The specific gravity of the urine shows no loss of power of concentration, as in chronic nephritis;

2. Albumin and casts appear in the same quantities in both diseases;

3. The functional tests show but little renal impairment;

4. A markedly increased night volume of urine indicates a possible renal death.

In conclusion we may say that it is very essential to differentiate vascular hypertension from chronic nephritis with hypertension. Tests for renal function offer us a ready means of differentiation.

THE MASSACHUSETTS MEDICAL SOCIETY.

The next annual meeting will be held at the Boston Medical Library, June 8 and 9, 1920. Dr. R. H. Miller, 434 Marlborough Street, Boston, Chairman of the Committee of Arrangements.

PETER BENT BRIGHAM HOSPITAL.

Dr. Dean Lewis, Professor of Surgery (elect), Chicago University, has been acting for the past two weeks at the Peter Bent Brigham Hospital as Surgeon-in-Chief *pro tempore*, in charge of Dr. Harvey Cushing's service.

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* Hedinger and Schlayer: Deutsch. Arch. f. klin. Med., 1914, cxiv, p. 120.
Mosenthal, H. O.: Arch. of Int. Med., 1915, xvi, p. 733.
O'Hare, J. P.: Arch. of Int. Med., 1916, xvii, pp. 711-756.

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CHILD HYGIENE IN MISSOURI.

Health officers, mothers and educators throughout the country are watching with unusual interest the health survey and demonstration undertaken by the United States Public Health Service in several localities in Missouri in order to establish standards for child hygiene work in the school and in the home. There has been considerable interest centered about the selection of Missouri as the field for this work and many inquiries have been directed to the Public Health Service as to the reason for doing the work in that state. Conditions in Missouri are simply typical of the average American community, no better and no worse; the state of health of the child in Missouri may be accepted safely as the state of health of children throughout the United States. The real reason for the selection of Missouri for this work was the fact that the legislature of Missouri, at its last session, created a department of child hygiene and the State Board of Health adopted resolutions asking the Public Health Service, the only federal agency authorized to coöperate with State Health authorities, to come to Missouri and make a demonstration of how this department could in the best way function. This was supplemented with an invitation from the Governor and several volunteer agencies. The Public Health Service had planned to make such a survey and demonstration in some community, and eagerly accepted the invitation, because in Missouri the machinery was in readiness and numerous agencies offered their coöperation, both financially and with trained personnel.

Primarily the experiment will benefit Missouri. The health conditions of thousands of children will be studied by highly trained men and recommendations will be made to the parent and the teacher in cases where it is found that conditions need correction. Where necessary, glasses will be fitted for the eyes, the teeth will be looked after, and mentally backward children be classified so that proper corrective measures may be taken. The study will not cover the whole of Missouri, but will be confined to those communities which offer the best prospect of organizing the work on a permanent and self sustaining basis. It is not possible to say how much money will be expended, but results and not expense will be the first consideration. There is every reason to believe that there will be achieved results of lasting value. Dr. C. P. Knight, of the Public Health Service, is in charge of the undertaking, and is assisted by Dr. Lydia A. DeVilbiss. The coöperation of all official and unofficial health agencies is assured. The State Board of Health, American Red Cross, Missouri Tuberculosis Association, boards of education, women's organizations, and city officials are all participating enthusiastically. The working staff is made up of specialists in the different branches of medicine, nurses, field workers, and clerks.

It is the purpose of the Public Health Service to conduct a comprehensive field of investigation and demonstration in child hygiene along modern, scientific lines. In addition to this it is planned to organize a division of Child Hygiene within Missouri's State Board of Health and to assist and encourage local hygiene activities. Much of this work will be in the nature of a demonstration, not only for the people of Missouri, so that they may see the benefit of such work and make it state-wide, but for the country at large. It will tend to establish Missouri as the model state for such work and to set standards to be followed by other states.

Studies in particular phases of child hygiene have been made before in the United States, but usually they have been limited in their scope and territory. Among limited groups of school children the percentage of children with bad teeth, defective vision, or mental affliction has been ascertained, but little has been known of the environment from which these children came. The present study will go much further. As a first step field agents of the Public Health Service will make a house-to-house canvass in the localities selected. A physician and public health nurse will visit each home where there are children of the pre-school age. In all child hygiene work the first essential is that all births be registered; in many communities in the United States less than 70 per cent. of the children are registered.

The first work in the community, therefore, will be to determine what percentage of children in the pre-school age group have had their birth recorded. It is hoped that this will stimulate birth registration and give the health officer absolutely necessary information. At the same time the health conditions of children in a given community will be studied and the children will be enrolled. Infant health stations will be established and for children needing medical attention treatment will be made accessible. Prenatal supervision will be provided wherever it is possible or desired for this has been proved to be of inestimable value in reducing maternal and infant mortality.

With the active coöperation of the State Tuberculosis Association, teachers, nurses and physicians will conduct a modern health crusade in the schools. School children will be inspected and a card will be filled out for each child, giving a brief health history and recording his physical and mental condition. Where necessary, suitable treatment will be recommended, and facilities will be provided to make such treatment possible. The height and weight of each child will be recorded each month. Correct food and exercise will be suggested and health classes will be conducted for the undernourished children. Each month it will be possible to observe the progress of this work.

In conducting the demonstration in Missouri each community will be asked to make the work permanent, particularly that part of the work which provides for a health officer continually on duty in each community, and for the regular examination and treatment of the children. If it proves successful in Missouri, of which it gives every promise of doing, other states undoubtedly will be glad to adopt the same system.

It is a firm belief of the Public Health Service that not only can thousands of lives be saved in this way, but that by adopting proper corrective measures a great many of the physical and mental handicaps which follow the boy and girl through life may be removed at an early age, and the coming generations be made correspondingly stronger.

NARCOTIC DRUG REGULATIONS.

There is but one occasion when a physician may omit making a record of the disposal of the narcotic drugs in his possession, and that is when, while in attendance upon a patient away from his office, he personally administers the drug or preparation. In this case the record book is not available and the amount administered is usually so small that it makes but little difference in the amount of stock. Yet many practitioners keep an account of these personally administered doses, as the traffic in narcotics is watched closely by a force of trained field deputies, so that the revenue inspectors will find no shortage when they call to make examination of the stock.

The usual custom followed by the Federal inspectors in making an examination of a stock of drugs is first to look over the records of amounts bought and the amounts dispensed and compare them with the amount on hand. If there is a discrepancy, the owner of the stock, who is obliged to keep records of each transaction involving the drugs, is held responsible. Deputies are instructed from Washington to be more than ordinarily zealous in endeavoring to secure adequate punishment of persons guilty of violating the narcotic law.

Physicians and practitioners are reminded that whenever a place of business is changed immediate report should be made to the Internal Revenue office so that the proper authorities may be informed of the new location and changes may be made on the special license and on the order blanks. This should be done within the month in which the location is changed.

When a business or practice changes hands the new owner is liable to a tax for the period during which he conducts the business irrespective of any taxes paid by the predecessor, and the predecessor is not entitled to a refund of any tax paid by him on account of the transfer of ownership. In case of a change of ownership through death the person's executors or legal representatives may carry on the business after taking oath to their qualifications to engage in such business.

HOW TO CONDUCT NUTRITION CLINICS AND CLASSES.

It will be of interest to physicians in all parts of the country to know that there is to be given in Boston from April 5 to 17, 1920, a course in the organization and conduct of nutrition clinics and classes, under the direction of Dr. William R. P. Emerson of Boston. This course will be followed by a similar one in Chicago. The interest which has been manifested by members of the profession in this city and in distant ones indicates the need which is being felt for special training in order that local centers may be established for carrying on this work on a more extensive basis than has been possible hitherto. In Cleveland and in Grand Rapids, nutrition clinics and classes have been organized not only in hospitals, but also in the schools. The course will enable students who have had experience and training in nursing and in social work to prepare themselves for work in this important branch of child conservation service. Opportunities will be given for taking part in home visiting and in physical examinations. Instruction will be given in making charts and records, in food values and in other work incident to the activities of the nutrition clinics and classes. Students will be assisted in conducting their later work by whatever advice, aid, and published material with which it may be possible to furnish them. The importance of protecting our national future by conserving the physical resources of our children is unquestioned; in the promotion of this child welfare work this course should prove to be of great value. Further information may be obtained by communicating with the Nutrition Clinics for Delicate Children, 44 Dwight Street, Boston.

A PHYSICIAN AS AN AMBASSADOR.

It has been mentioned many times to the discredit of the medical profession that its members show little interest and take no part in public affairs This has always been much less the case in England than in America. It will be of interest to American members of the profession to note that Sir Auckland Geddes has been appointed British ambassador to the United States.

Sir Auckland Geddes was born in Edinburgh in 1879. He is a medical graduate and served as a surgeon in the South African War; later he became professor of anatomy at McGill University, Montreal, of which he was elected principal at the outbreak of the war. He served in the British Army during the war, and quickly rose to the position of brigadier-general in charge of recruiting. He then was appointed minister of reconstruction and national service, and at the close of the war he entered the ministry as president of the Board of Trade, an office which he has resigned to become ambassador to this country.

It is to the credit of the profession that Sir Auckland Geddes, after an active professional career, has taken so important a part in British public life during the past five years and now is to continue in a conspicuous and responsible diplomatic position as ambassador to the United States. His presence at Washington should contribute materially not only to the continued good feeling between England and the United States, but to the maintenance of professional comity between physicians of both countries.

MEDICAL NOTES

The Craig Colony For Epileptics.—The Craig Colony for Epileptics was established at Sonyea, Livingston County, New York, in 1894, admitting its first patient two years later. All applicants must be legal residents of New York State, and are admitted on the same basis as indigents. If the patient or his relatives are able to reimberse the State in whole or in part, they are expected to do so. Epileptics of all ages are received, although the present facilities for children are limited. The Colony can not care for those epileptics who are insane or markedly delinquent.

Of the five thousand patients and upward who have been admitted to the Colony since its opening, only ten per cent. have been graded as mentally normal or nearly so. Fifteen per cent. approximately, have been found to have undergone a more or less marked mental deterioration from what may have been originally an average mental status. Seventy-five per cent. of the entire number have been primarily feebleminded, over half of these being of the grade of moron or high grade imbeciles, while about twenty-five per cent. of the entire number have been low grade imbeciles or idiots.

Such medical and surgical treatment as may be indicated is given to patients at the Colony, so far as facilities permit. Ophthalmological examinations and dental treatment are given to all newly admitted patients. Extended mental and physical examinations are made in order to place the patient in a favorable environment, with some suitable occupation. Early in the coming fiscal year a Supervisor of Education is to be appointed to organize educational work at the Colony so as to make it sufficiently broad to include many of the young patients who have not received instruction in the past.

One of the original purposes of the Colony was to conduct investigations into the causes of epilepsy, in the hope that continued work along these lines would lead ultimately not only to the discovery of the causes, but also to methods of prevention and relief applicable to other nervous and mental disorders.

During the influenza epidemic at the Colony in October and November, 1918, there were approximately one hundred cases among employees and eight hundred among patients; sixteen per cent. succumbed to the disease. Smallpox and typhoid vaccine have been administered to all incoming patients as in the past years, and throat cultures have been taken. During the year, pneumococcus lipo-vaccine was administered to about six hundred patients at the Colony. A series of Wassermann tests is being carried out in the laboratory. There is comparatively little active tuberculosis among the Colony patients except among the most defective types; the ordinary infectious diseases have not been prevalent to any degree. There were two hundred and eighty-one deaths among the patients during the year. The twenty-sixth annual report of the Craig Colony for Epileptics contains a large number of autopsy reports made during the year.

AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS.—The next examination to be conducted by the American Board for Ophthalmic Examinations will be held at New Orleans on Monday, April 26, at the time of the meeting of the American Medical Association. Candidates who wish to take the examination for the certificate of the Board must have their application and necessary credentials in the hands of the Secretary at least sixty days before the date of the examination.

The American Board for Ophthalmic Examinations was organized, after a considerable amount of preliminary work, in 1916, and consists of nine members, three selected from each of the three organizations, the American Ophthalmological Society, the Section on Ophthalmology of the American Medical Association, and the American Academy of Ophthalmology and Oto-Laryngology. The purpose of the Board is (1) to establish standards of fitness to practice ophthalmology; (2) to investigate and prepare lists of medical schools, hospitals, and private instructors recognized as competent to give the required instruction in ophthalmology; and (3) to arrange, control, and conduct examinations to test the qualifications of those who desire to practice ophthalmology, and to confer a certificate upon those who meet the established standards.

The American Ophthalmological Society and the American Academy of Ophthalmology and Oto-Laryngology have voted that after 1920 they shall require every applicant for membership to possess the certificate of the Board, unless the applicant shall possess a degree in ophthalmology conferred by a university recognized by them as competent to prepare students for such a degree.

The American College of Surgeons: The Regents of the American College of Surgeons have appointed an Ophthalmic Credentials Committee to pass upon the professional qualifications of ophthalmologists who may desire to obtain Fellowship in the College and who are otherwise qualified. The personnel of this committee is identical with that of the American Board for Ophthalmic Examinations. Those who pass the examination given by this Board, if otherwise qualified, may be not only certificated by the Board but also may be, upon the recommendation of the Credentials Committee, admitted to Fellowship in the College without further examination.

In some cases the applicant's professional record is such as to give him a national reputation, or pre-eminence in his community. This fact, duly investigated and considered, may furnish ample evidence to satisfy the examiners that the applicant is well fitted to practice ophthalmology.

Applicants for examination and for the certificate of the Board are divided into three classes: (1) Those who have practiced ophthalmology ten years or more; from this class will be required reports of ten cases that have been observed or treated by the applicant and a list of papers or books published. (2) Those who have practiced ophthalmology five years and less than ten years; of this class will be required a report of twenty-five cases that have been observed and treated by the applicant, further examination to be held or not according to the candidate's professional experience. (3) Those who have practiced ophthalmology less than five years; of this class will be required: (1) A degree from a medical school of high standing, satisfactory to the Board of Examiners. (2) A certificate of one year's service in an ophthalmic clinic, or an interneship of one year in an ophthalmic hospital, or assistantship in private practice, with statement of the duties required in such a position. (3) In addition, certificates showing one year of special study of ophthalmology under competent instructors or in accepted institutions for gradute teaching, not necessarily continuous nor at the same place; but periods of study of less than three months at one institution are deprecated by the Board.

After 1920, candidates in this class will be required to show that they have had a year of clinical hospital experience, preferably in a general hospital, or laboratory work following four years in a medical school preliminary to special study of ophthalmology and service as ophthalmic interne.

For all classes, the Board will require a high ethical and medical standing and a medical degree satisfactory to the Board.

Typhus in the Ukraine.—There has been reported an epidemic of typhus in the Ukrainian army and among Denikine's troops in the Ukraine. Doctors are unable to check the spread of the disease both because of lack of numbers and scarcity of medical supplies.

Association of Surgeons of Great Britain and Ireland.—At a recent meeting of British surgeons, it was decided to form an "Association of Surgeons of Great Britain and Ireland," an association similar to the one formed by British physicians a number of years ago. The existence of this society will make it possible for surgeons to meet at various places for the exchange of observations and a comparison of results. It has been announced that the association will stand as a representative body for British surgeons and will represent British intrests at international surgical congresses. Sir John Bland-Sutton has been elected president of the association.

The Yale School of Medicine.—The following minutes were recommended and adopted by the coöperation of Yale University, as a result of the survey of the medical school by Dr. Fred T. Murphy:

1. That there is a clear and definite opportunity and obligation of the university to medical education.
2. That the Yale School of Medicine has a valuable nucleus of men and material and sound traditions, which richly justify the development of an institution for medical education of the highest type.
3. That the corporation accept as a policy the development of a medical school of the highest type to include the pre-clinical and clinical years of instruction upon such principles of medical education as may be approved by the corporation, after conference with the medical faculty.
4. That every effort be made to obtain at the earliest possible date the necessary funds with which to expand and develop the buildings, the equipment, the instinction, and the research, and the service, in accordance with the best ideals of modern medical education as an essential unity of our university plan for development.

Measures to Increase French Birthrate.—A decree has been issued recently by President Poincaré creating a national division of the ministry of health to deal with the problem of increasing the birthrate in France. M. Breton, chief of the ministry of health, is reported to have made the following statements on this subject to the cabinet:

> "The lowness of the French birthrate, which becomes worse each year, endangers the existence of the nation. For a long time before the war France lacked men. French soil is one of the most fertile in the world, but is one of the least productive because of the lack of labor. Because of the lack of men, industry in France is obliged to depend more on immigration than any other European country. The war, in depriving France of 2,000,000 young men, has increased still more the danger which threatens the nation.
>
> "We have often studied this situation, which is unique with France; we have recognized that it is not due to one cause, but to a multiplicity of causes. Therefore, to combat it, we must not resort to one remedy, but to many remedies, some of a moral nature, others of a national and economic nature.
>
> "We must not entrust this grave question, the gravest of all that confronts us, to a temporary commission, irregularly convoked, but to a permanent organization meeting at fixed periods and equipped with sufficient means of inquiry and publicity.
>
> "A council will give its advice upon questions proposed by the ministry or upon those which belong upon its calendar. It will prepare projects of law, decrees, and circulars which, it believes should be presented to the minister. It can call in authorities for consultation."

The council is to consist of thirty members and will meet once a month. In each department there is to be a sub-commission. Among other duties, the council is to "examine all measures which may combat depopulation, increase the birthrate, develop puericulture, and protect and honor large families."

Mortality Statistics for 1918.—The Census Bureau's annual compilation of mortality statistics for the death registration area in continental United States, which will be issued shortly, shows 1,471,367 deaths as having occurred in 1918, representing a rate of 18.0 per 1,000 population, the highest rate on record in the Census Bureau—due to the influenza pandemic. Of the total deaths 477,467, or over 32 per cent. were due to influenza and pneumonia (all forms), 380,996 having occurred in the last four months of the year during the influenza pandemic. The rate for influenza and pneumonia (all forms) is 583.2 per 100.000. Influenza caused 244,681 deaths and pneumonia (all forms) 232,786, showing rates of 298.9 and 284.3 per 100,000, respectively, these being the highest rates which have ever appeared for these causes. The rate in 1917 for influenza was 17.2 and for pneumonia (all forms) as 149.8. In fact the difference (416.2 per 100,000 population) between the 1917 and 1918 rates corresponds with the excess mortality which occurred in the last four months of the year from the influenza pandemic. The next most important causes of death were organic diseases of the heart, tuberculosis (all forms), acute nephritis and Bright's disease and cancer, which together were responsible for 391,391 deaths, or nearly 27 per cent. of the total number. The death registration area in 1918 comprised 30 states, the District of Columbia and 27 registration cities in non-registration states, with a total estimated population of 81,868,104, or 77.8 per cent. of the estimated population of the United States. The Territory of Hawaii is now a part of the registration area, but the figures given in this summary relate only to continental United States. The deaths from organic diseases of the heart numbered 124,668, or 152.3 per 100,000 population. The death rate from this cause shows a slight decrease as compared with 1917, when it was 153.2 per 100,000. There have been fluctuations from year to year, but in general there has been a marked increase since 1900, the earliest year for which annual mortality statistics were published, when the rate for organic diseases of the heart was 111.2 per 100,000 population. Tuberculosis in its various forms caused 122,040 deaths, of which 108,365 were due to tuberculosis of the lungs. The death rate from all forms of tuberculosis was 149.1 per 100,000, and from tuberculosis of the lungs 132.4. The rate from tuberculosis of all forms declined continuously from 200.7 per 100,000 in 1904 to 141.6 in 1916, the decrease amounting to nearly 30 per cent.: but for 1917 and 1918 increases are shown, the 1918 rate being somewhat higher than the rate for 1917, when it was 146.4. Until 1912 more deaths were due to tuberculosis than to any other single cause, but in that year and during the period 1914-1918 the mortality from tuberculosis was less than that from heart diseases. Bright's disease and acute nephritis caused 79,343 deaths, or 96.9 per 100,000. This is a noticeable decrease as compared with 1917 when the rate was 107.4 per 100,000. Cancer and other malignant tumors were responsible for 65,340 deaths, of which number 24,783, or nearly 38 per cent., resulted from cancer of the stomach and liver. The rate (79.8) is a decrease from 1917, when it was 81.6. With the exceptions of the years 1906, 1907, 1911, 1917, and 1918, there has been a continuous increase in the death rates from these diseases. Apoplexy was the cause of 64,904 deaths, or 79.3 per 100,000. This rate, too, declined, having been for 1917, 82.9. Diarrhea and enteritis caused 59,109 deaths, or 72.2 per 100,000, a decrease from the rate (79.0) for 1917. More than four-fifths of the total deaths charged to these causes in 1918 were of infants under two years of age. Arterial diseases of various kinds —atheroma, aneurism, etc., resulted in 19,027 deaths, or 23.2 per 100,000, which rate is somewhat less than that (25.3) for 1917. Deaths from diabetes numbered 12,927, or 15.8 per 100,000. The rate from this disease increased almost continuously from 9.7 in 1900 to 17.0 in 1916, but since 1916 a slight decrease for each year is apparent. The rate for 1917 was 16.9. Bronchitis caused 12,783 deaths, or 15.6 per 100,000. This rate is lower than that for any preceding year. The proportional decline from 1900, for which year the bronchitis rate was 45.7 to 1918, amounted to 66 per cent. The rate for diphtheria is 13.8, representing 11,280 deaths. As compared with 1917, when the rate was 16.5, there is a perceptible decrease. Typhoid fever resulted in 10,210 deaths, or 12.5 per 100,000. The mortality rate from this cause has shown a remarkable reduction since 1900, when it was 35.9, the proportional decrease amounting to 65 per cent. This highly gratifying decline demonstrates in a striking manner the efficacy of improved sanitation and of the modern method of prevention—the use of the antityphoid vaccine. Whooping cough and measles together were responsible for 22,534 deaths of adults and children, for 27.6 per 100,000. The rates for these diseases were respectively, 16.8 and 10.8 as compared with 10.4 and 14.3 for 1917. Deaths due to external causes of all kinds—accidental, suicidal, and homicidal—numbered 82,349 in 1918, corresponding to a rate of 100.6 per 100,000 population. This is a noticeable decrease, the rate for 1917 being 108.8. In fact, except for automobile and machinery accidents and injuries, all the external causes showed a general decrease in 1918. The greatest number of deaths charged to any one accidental cause—10,330. or 12.6 per 100,000—is shown for falls. Next to falls, the greatest number of accidental deaths—8,610, or 10.5 per 100,000—resulted from railroad accidents and injuries. Deaths from automobile accidents and injuries in 1918 totaled 7,525, or 9.2 per 100,000 population. This rate has risen rapidly from year to year, which strongly suggests the need for better traffic regulations and better enforcement of those we now have. Burns —excluding those received in conflagrations— were responsible for 6,638 deaths, or 8.1 per 100,000. Accidental drowning caused 5,633 deaths, or 6.9 per 100,000. This rate is considerably less than that for any preceding year since 1910. Deaths due to accidental asphyxiation (except in conflagrations) numbered 3,371, or 4.2 per 100,000. The rate is slightly less than that, 4.5, for the previous year, but is somewhat higher than the rate for any year during the preceding ten-year period. Nine accidents and injuries resulted in 2,497 deaths, or 3.1 per 100,000. Machinery accidents caused 2,371 deaths, or 2.9 per 100,000, a rate greater than that for any year covered by the Bureau's mortality records. Deaths resulting from street-car accidents numbered 2,366, corresponding to a rate of 2.9 per 100,000. Deaths due to injuries by vehicles other than railroad cars, street cars, and automobiles numbered 2,337, or 2.7 per 100,000. The number of suicides reported for 1918 as 9,937, or 12.1 per 100,000, the rate being the lowest shown for any year since 1903. Other deaths due to external causes totaled 20,834, or 25.4 per 100,000.

BOSTON AND MASSACHUSETTS.

Research in Occupational Therapy.—Through the generosity and understanding of a friend of occupational therapy, it has become possible to establish at Marblehead, Massachusetts, a small experiment station for the study of the problems of invalid occupation. The plan is to maintain a studio and workshop where designers and craftsmen, unhampered by the demands of teaching, may work out ideas and suggestions for hospital industries.

The general value of regulated work in convalescence and in long continued disability is firmly enough established. But the time is coming soon when those who are directing this branch of medicine will be called upon to prescribe with increasing accuracy, and when the work of patients will have to be standardized and improved in design and quality. The sponsors of this experimental shop are interested in all phases of Occupational Therapy, but specially in the development of new occupations which will be elastic enough to meet the varied requirements of invalids and which will, at the same time result in really valuable products.

There will be a small permanent staff of designers and craftsmen and probably a rotating staff of Occupationl Aides who can leave their active teaching long enough to work out their own problems under favorable conditions.

The new shop is devoted wholly to the advancement of Occupational Therapy. Any profits which may come from the sale of tested materials or of finished products will be turned into the plant or used toward scholarships for visiting teachers.

It would seem as though there were very definite use for such a centre, but if the new venture is to have full value and effectiveness it must secure the coöperation of everyone interested in occupations for invalids.

Teachers and others are invited to send in ideas and suggestions which will be studied and developed whenever possible, and which if used will be acknowledged in future bulletins. Communications may be addressed to Herbert J. Hall, M.D., Director, 69 Pleasant Street, Marblehead, Mass.

Week's Death Rate in Boston.—During the week ending March 20, 1920, the number of deaths reported was 251 against 228 last year, with a rate of 16.19 against 14.93 last year. There were 52 deaths under one year of age against 36 last year.

The number of cases of principal reportable diseases were: Diphtheria. 38; scarlet fever, 66; measles, 209; whooping cough, 84; typhoid fever, 3; tuberculosis, 76.

Included in the above were the following cases of nonresidents: Diphtheria, 8; scarlet fever, 18; measles, 1; whooping cough, 2; typhoid fever, 2: tuberculosis, 9.

Total deaths from these diseases were: Diphtheria. 3: scarlet fever, 1; measles, 2; whooping cough, 7; tuberculosis, 18.

Included in the above were the following nonresidents: Diphtheria, 1; tuberculosis, 1.

Influenza cases, 60. Influenza deaths, 4.

Massachusetts General Hospital.—The Clinical Meeting of the House Officers of the Massachusetts General Hospital will be held on Wednesday, April 7, at 8 p.m., in the Out-Patient Department amphitheatre. Program as follows:

1. Laryngeal Paralysis in Auricular Fibrillation. Dr. Joseph Garland.
2. Asthma, Hay Fever, and Allied Conditions, Dr F. M. Rackemann.

Dr. William H. Smith will preside.

The Clinical Meeting of the Out-Patient Department Medical Staff will be held on Wednesday, April 7, at 12 noon, in the lower amphitheatre, Out-Patient Department. Program as follows:

1. Bodily Mechanics in Relation to Medicine, Dr. Lloyd Brown.
2. Bronchial Asthma, Dr. Francis Rackemann

Boston City Hospital.—The monthly Clinical Meeting of the Boston City Hospital will be held in the Cheever surgical amphitheatre, at 8.15 p.m., on Thursday, April 8.

Case demonstration.

Studies in the Prevention of Pneumonia, Dr. George P Sanborn.

Discussion opened by Dr. Cleaveland Floyd.

Halsey B. Loder, *Chairman.*

Miscellany.

REPORT UPON HEALTH EDUCATION BY THE JOINT COMMITTEE ON LEGISLATION OF THE MASSACHUSETTS MEDICAL SOCIETY AND THE MASSACHUSETTS HOMEOPATHIC MEDICAL SOCIETY.

On February 19, 1920, the Committees on Education and Public Health of the Legislature, sitting jointly, held extended hearings on the various bills for health education.

The recommendations of the State Department of Health relative to the appointment of school nurses have been reported favorably by the Committee (House Bill 200).

The Mahoney Bill (Senate 32), Senate 66 from the files of last year, the Lord Bill (Senate 122), the Nelligan Bill (House 220), the Hannagan Bill (House 641), and the Stone Bill (House 777) were all considered at the hearing. Determined opposition to some of the proposed bills developed on the following grounds: (1) That they created unwise centralization of power, (2) that they permitted education in sex hygiene and birth control, and (3) that they might expose young girls to indignities on the part of school physicians. Certainly none would oppose bills open to these objections more than would physicians. The principles underlying the movement for health education were advocated by many individuals and organizations.

After mature deliberation, Senator Chamberlain for the Committee has reported the following bill:

> *Section 1.* The Commissioner of Education, with the approval of the Department of Education, shall appoint an agent of said department with two associates (one of whom shall be a

woman) who shall be qualified to supervise and direct the work of physical training in the public schools and the normal schools. The salary of the first agent shall not exceed four thousand dollars and that of his associates shall not exceed twenty-five hundred dollars each, the said salaries to be fixed by the Commissioner of Education, subject to the approval of the Governor and Council.

Section 2. The agents of the said department shall coöperate in an advisory capacity with local school authorities and the state normal schools in promoting child welfare by healthful physical training.

Section 3. The school committees in cities and towns or groups of towns shall appoint supervisors of physical training with the necessary associates, who shall, under the direction of the school committee, establish, supervise, and direct adequate systematic courses of instruction in physical training.

Section 4. For the promotion of physical training in the public schools and the state normal schools there shall be annually appropriated a sum equal in amount to three cents for each child between the ages of six and eighteen enrolled in the public schools during the school year next preceding the year in which the appropriation is made.

Section 5. This act shall take effect on the first day of August, nineteen hundred and twenty.

It would seem that this bill met completely the objections raised at the hearing. That there is still determined opposition to the bill is indicated by the fact that the following Representatives dissent: Messrs. Donovan, Mulvey, Sweeney, O'Connell, Early, and Harvey.

It is earnestly hoped that all physicians will consider carefully the merits and faults, if any, of the Chamberlain Bill. If faults can be found they should be eliminated. If the bill is a step in the right direction to correct the shameful conditions revealed by the rejections of the draft boards for physical defects, it is incumbent upon us to urge the passage of the bill.

James S. Stone, *Secretary.*

RESOLUTIONS ON THE DEATH OF DR. SOUTHARD.

At the meeting of the Executive Committee of the Massachusetts Society for Mental Hygiene held March 9, 1920, the following resolution was adopted:

The Directors of the Massachusetts Society for Mental Hygiene desire to express their deep sorrow and their great sense of loss in the death of Professor Elmer Ernest Southard. To many of them he was a warm personal friend whom they will sorely miss. His great natural abilities, his extraordinary powers of insight and deduction were most valuable to the Society in which he took an active and stimulating interest.

The Directors feel that they have lost not only a most valuable advisor and colleague but one on whose sympathy and friendship they could always depend.

It was voted that a copy of this resolution should be sent to his family, to The Boston Medical and Surgical Journal, to the *Mental Hygiene Quarterly*, and entered in the records of the Society.

UNITED STATES CIVIL-SERVICE EXAMINATIONS.

Receipt of Applications Will Cease on June 29, 1920.

The United States Civil Service Commission announces open competitive examinations for bacteriologist and junior bacteriologist. Vacancies in the Public Health Service throughout the United States, at salaries indicated below, and in positions requiring similar qualifications, at these or higher or lower salaries, will be filled from these examinations, unless it is found in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

The register of eligibles resulting from the bacteriologist examination will be used for filling vacancies in the positions of bacteriologist at $130 to $180 a month, and associate bacteriologist at $90 to $130 a month.

The register of eligibles resulting from the junior bacteriologist examination will be used for filling vacancies in the positions of assistant bacteriologist at $70 to $90 a month; junior bacteriologist at $70 a month; and junior bacteriologist, part time, at $30 to $50 a month.

Appointees will be allowed subsistence, and one room or $15 to $20 a month in lieu of quarters, according to grade and station.

Appointees whose services are satisfactory may be allowed the temporary increase granted by Congress of $20 a month.

The entrance salary within the range stated will depend upon the qualifications of the appointee and the duty to which assignment is made.

In filling vacancies in positions with headquarters outside of Washington, D. C., certification will be made of the highest eligibles residing nearest the vicinity of the place at which the appointee is to be employed, except that upon the request of the department certification will be made of the highest eligibles on the register for the entire country who have expressed willingness to accept appointment where the vacancy exists.

Both men and women, if qualified, may enter these examinations, but appointing officers have the legal right to specify the sex desired in requesting certification of eligibles.

The duties of bacteriologists will require ability to identify the ordinary pathogenic microörganisms; to make and preferably interpret sections of pathologic tissues; to make examinations and analyses of water, milk, urine, stomach contents, and body fluids; to make blood counts and do complement fixation tests.

Associate bacteriologists must have familiarity with most of the preceding technique and capacity to learn any of it.

Assistant bacteriologists must have familiarity with staining, culture making, bacteriologic diagnosis of infectious diseases, urinalysis, alkalis, and capacity for development.

The duties of junior bacteriologists and junior bacteriologists, part time, require qualifications similar to those of assistant bacteriologists, in a slightly lesser degree.

Competitors will be rated upon the sworn statements in their applications and upon corroborative evidence.

Applicants for the examination for bacteriologist must be graduates from a college or university of recognized standing in a course including biology and bacteriology, and have had at least two years' postgraduate experience in practical bacteriologic methods.

Applicants for the examination for junior bacteriologist must have graduated from a four years' high-school course or completed a course of study equivalent to that required for such graduation; and have had at least one year's experience in practical bacteriologic and clinical laboratory methods.

Ability to do a satisfactory Wassermann reaction is absolutely necessary for any of these positions, and applicants must submit satisfactory evidence as to their ability in this respect.

Applicants must have reached their eighteenth birthday on the date of making oath to the application, and must be in good physical condition. The medical certificate in the application form must be executed.

Applicants must submit with their applications their unmounted photographs, taken within two years, with their names written thereon. Proofs or group photographs will not be accepted. Photographs will not be returned to applicants.

Applicants will be admitted to these examinations regardless of their residence and domicile; but only those who have been actually domiciled in the State or Territory in which they reside for at least one year previous to the date of making oath to the application, and who have the county officer's certificate in the application form executed may become eligible for permanent appointment to the apportioned service in Washington, D. C.

These examinations are open to all citizens of the United States who meet the requirements.

NOTICES.

The Twenty-Eighth Annual Meeting of the Association of Military Surgeons of the United States.—The twenty-eighth annual meeting of The Association of Military Surgeons of the United States will be held at New Orleans, La., April 22 to 24, with headquarters at the Hotel Grunewald.

Three sessions daily will be held and at these addresses on pertinent topics will be made and discussed by members of the Association. In spite of the name of the Association, the topics dealt with will not be confined absolutely to the field of military surgery as the fact that a man has been in the service does not divorce him from the ordinary problems of the practice of medicine. This meeting occurs immediately prior to that of the American Medical Association on the twenty-sixth, and it is hoped that many of those who expect to attend the latter meeting may arrange their plans so as to take in our meeting as well.

It is desired to invite attention to a fact which is not generally understood by medical men of the country, that practitioners in medicine are welcome at any of the sessions of the Association even though they be not members themselves. It is the desire of the Association to have the medical profession of the country conversant with the work which is being done by The Association of Military Surgeons and we feel that in this way they may very readily become acquainted with it.

Any further information relative to this meeting may be obtained by Addressisg the Secretary, Army Medical Museum, Washington, D. C.

American Proctologic Society.—The twenty-first annual meeting of the American Proctologic Society will be held at Memphis, Tenn., on April 22 and 23, 1920, with headquarters at the Hotel Grayoso. Clinics will be held at the Memphis General Hospital, the Baptist Memorial Hospital, and the University of Tennessee. The following addresses will be included in the program:

Annual Presidential Address: "Coöperation and Coordination," Collier F. Martin, Philadelphia, Pa.

1. "Post-operative Treatment of Fistula, with Special Reference to the Use of Gutta-Percha Tissue," Alfred J. Zobel, San Francisco, Cal.
2. "Some Aids in the Record Keeping of Ano-Rectal Cases," Ralph W. Jackson, Fall River, Mass.
3. "Standardization of Hemorrhoid Operations," Louis J. Hirschman, Detroit, Mich.
4. "Personal Experience in the Treatment of Internal Hemorrhoids," Alois B. Graham, Indianapolis, Ind.
5. "A Virulent Infection of the Colon by the Colon Bacillus," Jerome M. Lynch, New York, N. Y.
6. "Pleuro-Colonic Fistula," Frank C. Yeomans, New York, N. Y.
7. "Reflexes Due to Rectal Diseases," William M. Beach, Pittsburgh, Pa.
8. "Pre-operative Treatment in Rectal Surgery," William H. Stauffer, St. Louis, Mo.
9. "Local Pain and Other Symptoms Associated with Infections of the Anal Tissues," Granville S. Hanes, Louisville, Ky.
10. "The Recto-Vaginal Septum in Proctology," Descum C. McKenney, Buffalo, N. Y.
11. "Disabilities Due to Intestinal and Rectal Diseases in the Young Soldier," William H. Axtell, Washington, D. C.

COMPLIMENTARY LUNCHEON TO GENERAL LEONARD WOOD.

The Class of 1883, Harvard Medical School, are to give a complimentary luncheon to General Leonard Wood at Symphony Hall, Boston, Tuesday, April 13, 12 to 2.30 p.m.; speakers, Dr. Henry Jackson, president of the class, who will preside; Dr. Alfred Worcester, president of the Massachusetts Medical Society, and General Leonard Wood.

Over 7,000 invitations have been sent out to all physicians of New England. As there are only 1,111 seats in the hall, it is the belief of the committee that the affair will be oversubscribed.

More complete notice of the event will be given in our next issue.

Tickets to luncheon are placed at $4.00, with seats in balcony at $1.00 each. All seats are sold only by subscription. Tables will seat 27 persons. Tables will be reserved for physicians desirous of sitting together. Tables will also be reserved for delegations from the various hospitals.

For further particulars inquire of the class secretary,

Dr. Silas Hibbard Ayer,
318 Shawmut Ave., Boston, Mass.
Telephone, Back Bay 6723.

TRANSPORTATION TO MEETING OF AMERICAN MEDICAL ASSOCIATION, NEW ORLEANS, APRIL 26 TO 30.

The Travel Department of the American Express Company furnishes the following information:

Having had considerable difficulty in obtaining any information regarding hotel accommodations in New Orleans at the time of the medical convention in that city in April, we telegraphed to one of our representatives who happened to be arriving in New Orleans with one of our cruise steamers, and he has wired us that the entire hotel and boarding house situation has been placed in the hands of Dr. J. J. Wymer, care Maison Blanche Building, New Orleans.

The telegram also stated that sleeping cars could be parked for occupancy during the stay in New Orleans and that the city of New Orleans would care for lighting and sanitary conditions.

Owing to the prevailing strike of longshoremen in New York City on the various coastwise lines, there is absolutely no way of predicting what, if any, sailings there will be from New York by steamer to New Orleans in April; hence, the impossibility of figuring on the date of arrival in New Orleans if traveling by steamer.

The trip by rail from Boston to New Orleans can be made in about fifty-one (51) hours.

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THE MEDICAL ASPECT OF DENTAL IRRITATION.

By William A. Lurie, M.D., New Orleans, La.

With the many revolutions in theory and practice in the science of medicine, has dentistry kept pace? This is a question which should present itself for consideration, as the very first concept of the subject.

The advancement in medicine has been marked by numerous leaps and bounds, and conditions which seemed impossible or unconquerable yesterday may be simple and of easy explanation today. All these advancements have taken place almost simultaneously in every branch of medicine. They can be accounted for by the close association which exists in all branches of medicine. Among the notable advances may be mentioned those of the laboratory. It has kept pace with medicine, and at times perhaps been a bit ahead of it. It may be that as an entity, not any of the branches of medicine would have been capable of so great an advance without the assistance of the others.

This has not been true of the practice of dentistry. It has been deemed sacrilegious for one without a dental degree, or who has not had years of dental experience, even to comment on mouth conditions, particularly where reference to the teeth, their function, their use, their care or their repair was made. Medicine therefore busied itself elsewhere and forsook the mouth as a field for its care. It has been left to the dental profession, and what has been the result?

The laboratory which has kept pace with dentistry has been the dental laboratory,—a mechanical institution. There has been no attempt made towards scientific advance. The effect on dentistry of the association with a mechanical institution has become apparent in the advancements made by that profession. They have in the main been mostly mechanical. At the expense of human life and happiness, many new and beautiful artificial substitutes for teeth and compounds for fillings have been developed. In numbers of instances experience has proved that nature will not tolerate what may seem perfect in theory or in mechanical practice.

Dentistry is not to blame for the condition. The physician of the past has not taken it upon himself to instruct his patient relative to mouth conditions, no more than he has preached the laws of sanitation. The dentist, however, has long taught the care of the mouth, but from a standpoint of mechanical usefulness. Statistics reveal the fact that only a small proportion of people visit the dentist, during an ordinary life-time, when compared with the number who visit the physician. Here again the medical profession has fallen behind in its public duty. The greatest benefit derived from the teachings in hygiene comes from a personal contact of teacher and pupil. Still the greatest volume of people never visit a dentist except in cases of necessity. Through the neglect of the medical profession, the vast majority of people have never had the advantage of authoritative teachings relative to mouth conditions. Those who do visit the dentist for some affection of the teeth or jaws are in no frame of mind either to listen or to pay for a lecture on how to prevent a condition which they already have or may never have again. In terse words, the public does not seem inclined to pay to learn "how to prevent."

The lay press has stepped into the breach and by a series of write-ups, some rational and practicable, but a vast majority far overdrawn, they have worked the public mind to the point where it has forced dentistry beyond itself. The immediate effect of this movement is now being felt in every community. Whenever and wherever a person has an ache or a pain, he is reminded that it may come from his teeth, and post-haste a visit to a dentist discloses a possible source of irritation or infection.

Does the removal, or the cure of the infection or irritation about the patient's teeth, cure the patient? Not always. Why? The question of why a patient who has had an infected tooth or some dental irritation relieved and does not get well is one for medicine to solve, and not for dentistry. There has been much written on the subject, and it is of greater volume than can be undertaken here.

Where the interest in a tooth is only mechanical on the one hand, as it is in dentistry, and physiological, as relates to medicine, on the other, there is of necessity a diversity of opinion. While a tooth is a necessity and is often needed as a support for some denture, it does not follow that a patient must retain such a tooth, and be the host of a constant irritant or infection.

In this connection one often hears the criticism of the medical profession, by the dental, in that many teeth are extracted which could be saved. Is such criticism on the part of the dental profession just criticism? Does the dentist know the seriousness of the patient's harboring an infection, while he is attempting to treat and save the tooth? He does not.

The recent studies in blood pictures have clearly shown the difference in cases where there is found irritation without infection, infection without a vast incident of irritation or both concomitant. The studies of cases of mouth infection and irritation carried on along the same lines, show that the same relation holds true with relation to conditions of the oral cavity as elsewhere in the body.

In the greatest number of instances, dentists who have not had the experience in this direction but who are expert in the mechanical side of their profession, lose sight of these facts. Perhaps it has never been brought to their attention, but be that as it may, the medical profession must stand the accusation of being remiss. Medicine has made its mistakes in its relation to dentistry, just as dentistry many times refuses to recognize its relation to general medicine.

From the medical aspect of the mouth, relative to infections and irritation, the necessity of a proper masticating apparatus is an essential factor, and the one which links medicine and dentistry. The dentist is interested in maintaining a mechanical means for food mastication, while the physician directs his attention to mastication to see that it is properly performed for the purpose of beginning digestion.

The greatest effect of mouth conditions is no doubt primarily felt in the alteration of digestion, through the inefficient mechanical construction of the jaws, and second through enzyme activity. Much has been written on the effects of improper digestion. Theories and counter theories have been advanced, but let it suffice to mention here that the condition of the mouth, through irritation or infection, is often reflected in the digestive ability of the ferments introduced into foods while in the mouth. It is a fact that an irritation may cause an increase in salivary secretion to such an extent that when food is introduced there is no response to the additional stimulation. Such lack of digestion is recognized as due to a decrease of ferment concentration. An infection may be the underlying factor in the causing of an acid reaction to the mouth sufficient to inhibit the activity of the saliva when it is poured into the mouth.

The effect of an oral infection or irritation is not necessarily only a local one, or on digestion entirely. Toxines, as well as bacteria from an infected site in the mouth, are carried everywhere by the blood stream. The numbers of changes in glandular tissue throughout the body resultant therefrom are the subjects of study by many today. The effect of the production of energy under the stress of such irritation or infection is being considered in the study of the function of the ductless glands.

Is it the rôle of the physician or the dentist to care for such conditions?

Where the question arises, and it often does, of the sacrifice of a tooth, though it may appear of great importance, dentally, the condition of the patient relative to resistance, vitality and ability at regeneration is of the greatest importance and should be given prime consideration. The dental treatment necessary to have the patient retain such a tooth, without irritation or infection is of doubtful value and unknown duration. Often after the most skillful treatment the patient harbors an irritant or an infected member. The medical view of the case should govern the decision as to the advisability of saving the tooth.

Bloodgood makes mention of the fact that a greater percentage of mouth conditions assume a malignancy than any other group elsewhere in the digestive tract. Perhaps the work of Yamagihwa and Ischicawa on cancer may lend some light on this subject. A constant irritation, continuous infection and a washing away of the products of destruction, thereby preventing the building of a body resistance or perhaps preventing the formation of inhibiting bodies, either generally or locally.

Where the interest in the mouth of a patient is centered on the teeth, many conditions of general character, whose symptoms may be reflected in the mouth, may be looked upon as being rather the result of a local condition than a general one. The increasing number of syphilitic conditions which find expression in the mouth and are looked on by many of the dental profession as purely local lesions are not inconsequential in number.

Recent writings call attention to the increasing numbers of oral cancers, the result of gummatous degeneration. In a contemplation of the increase of the malignant degeneration of these conditions, the irritation of tobacco smoking is also strongly mentioned. The increase of this habit, plus the added numbers of irritants, the results of some of the new ideas in dental replacements and abutments for bridges should be mentioned as additional possible causative factors. Perhaps these, too, have their influence on the development of malignancy.

It will never be known what percentage of gastric ulcers have gone on to malignancy because of some faulty condition of the mouth. In many of these cases the mechanical and dental aspect of the mouth is apparently good, or perfect. Too often only a superficial examination of the mouth is made.

From such examinations, without intelligent roentgenograms and their proper interpretation one may never hope to determine a local condition which is the result of a general condition, or a local condition responsible for a general condition. The number of devitalized teeth which show no external evidence of trouble, or the healed areas where teeth have been extracted, which might still remain infected, is given little consideration. The picturing of the apical areas of such teeth or of the jaw bone where extractions have taken place is a matter of more recent study, and to my knowledge there are no accurate data on these points to date. However, from my experience I believe that too often changes of great magnitude are looked for before anything radical in the way of tooth extraction or alveolar resection is advised. An area may be badly infected and the bone changes pictured in the roentgenogram may be but slight.

An old stagnant diseased area may appear to be an innocent process in a roentgenogram, or the several tests may not indicate any seriousness associated with the local condition, but there is no way of determining when such an area may undergo a rapid absorption, with a resultant intoxication. In the event of a superficial lesion elsewhere in the body, such areas are prone to become secondarily infected. The symptoms and symptom complex referable to foci of infection are various and numerous, and any one or any group of such symptoms may result from just such an area.

As a field for study, the mouth of a growing child will yield a greater number of unexplained conditions than can be found in the jaws at almost any other stage of life.

It has been several years since the writer was impressed with the association of the acute infectious diseases of childhood and dentition.

All medical writers have pointed to the comparative immunity of the infant under six months, to these infections. It seems that the greatest number of so-called diseases of childhood began with the time of the beginning of deciduous dentition and ends about the time of the total loss of the baby molars. Comparative statistics will reveal that the proportion of children between two and four years of age, who suffer from acute infections is less than those between four and eight years. When a child reaches the age of two years, it has, or should have acquired all of its set of first teeth. There is then less local irritation and infection than in the life period just passed, or after the age of four, when second dentition often begins. With the erupting of the second set of teeth, there is always more or less irritation or infection about the teeth, which continues until dentition is completed.

The superficial infections and irritations incident to dentition lowers the resistance of the child, at least temporarily. The various forms of streptococci which inhabit the mouth normally may assume a transmuted form and under the proper conditions assume a predominant proportion in the case, and appear as the exciting cause of the infection. The work of Rosenow has been monumental in this direction.

Infections about the mouth are more common than any other conditions about the body. From an almost insignificant marginal infection about the gum of the molar teeth, there may develop a painless and symptomless extension into the deeper faciae, as the temporal, masseter or platysmal. These infections may extend to the development of a deep-seated phlegmon, or present but more minor symptoms. Many times teeth are unnecessarily sacrificed for such conditions, when a little attention to the local condition in the mouth and the care of the infected fascia either surgically or otherwise as indicated would have cleared up the case. At times such infections produce a great amount of local swelling, but there is very little pus formation.

It is the purpose of this paper to stimulate the medical profession, if possible, to the realization that there is another aspect to the mouth than that of dentistry alone. That mouth conditions deserve the attention of the medical man as well as that of the dentist. On the other hand, dentistry, as such, does not cover all diseases of the mouth and jaws, and such as result therefrom.

Mouth conditions have a medical aspect just as certainly as does any other part of the human anatomy, and as such the mouth is a field worthy of the special practice of the physician. As such, the specialty of stomatology need not interfere with that of dentistry any more than that of nose and throat, or any other combinations that one may care to mention.

It is my desire that there shall be nothing in this paper that shall be construed as antagonistic to dentistry. It is intended, rather, that both professions see the shortcomings in their branches, and a beneficial progressive advance result.

This paper is written with the thought and hope that conditions due to lowered defense will be considered, as Dr. John J. McNulty states, "from the physiologist's point of view; and that the basic therapy is physiologic therapy, so far as physiologic therapy stands serviceably revealed." With Dr. McNulty we believe, "These definite morbid radicals are expressions of lowered resistance due to disturbances of the normal functioning of the interrelated and interdependent autonomic mechanism—the internal secretions—enzymes cycle. And that the basic therapy is the employment of physiologically associated gland substances, with their internal secretions and enzymes, activating influences, to aid nature in the law she is ever trying to express, that is, inherent repair.

"We are not," Dr. McNulty writes, "interested so much in the question where primary infection occurs, as the fact that infection can occur anywhere in the organism. The ideal state of the human organism is a state of perfect defense where infection cannot occur, and our efforts should be to aid nature reëstablish and maintain this normal or unassailable condition."

ILEOSTOMY FOR POSTOPERATIVE OBSTRUCTION FOLLOWING APPENDECTOMY.*

By Edward P. Richardson, M.D., F.A.C.S., Boston.

Enterostomy is justly regarded in cases of acute intestinal obstruction coming on spontaneously, or months or years following laparotomy, as an evil often necessitated by the nature of the obstruction or by the patient's condition at the time of the operation. It may be a life-saving measure; nevertheless, the ideal procedure is to discover and deal with the point of obstruction.

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* Read at Southern Surgical Association, December, 1919.

In considering the treatment of intestinal obstruction, however, a distinction should be made between obstruction occurring spontaneously, or late after operation, and that occurring early after operation, during the period of convalescence, the type described by Deaver as post-inflammatory obstruction. Although commonly grouped together in statistics, they differ both in pathology and prognosis. In the first class, consisting of spontaneous and late post-operative obstruction, we are dealing with wide variety of pathological lesions, including firm organized bands and adhesions. In the second class, cases recently operated upon, the pathology is less uncertain. If mechanical obtruction exists, in the majority of cases it is caused by recent unorganized, or partly organized adhesions, which present a greater hope of yielding or absorbing. Such adhesions represent temporary rather than permanent causes of obstruction. If we further limit this second class of cases to its largest group, obstructions occurring during convalescence from appendicitis, the probable pathological cause is even clearer. Here in all likelihood the cause of obstruction is adhesions of the lower ileum in the neighborhood of the original wound, right iliac fossa or pelvis, with local paralysis of a segment of bowel from sepsis as a possible contributing factor. We can further say that strangulation of a loop of bowel is unlikely.

With the clearer estimation which is possible as to the character of the obstruction, and its less permanent nature, the place of enterostomy in treatment is distinctly different in obstruction during convalescence from its place in the treatment of obstruction in general. In this connection, since more radical measures are frequently advocated for this condition, particularly ileocolostomy, it has seemed worth while to record the result in seven cases of obstruction occurring during convalescence from appendicitis, representing my total experience to date, including five cases in which ileostomy was done.

While symptoms of ileus occurring shortly after operation for gangrene of the appendix with abscess or diffuse peritonitis are common, clear-cut mechanical obstruction is infrequent. Vomiting, distention, and obstipation, developing immediately after operation, characterized by absent or greatly diminished peristalsis and gas pains, are principally the result of peritoneal infection, and represent conservative efforts on the part of the individual to limit the sepsis. In such cases, treatment well directed toward aiding and maintaining the patient, Fowler position, proctoclysis with tap water or glucose solution, hypodermoclysis, gastric lavage, morphia, hot packs of the abdomen, enemata, pituitrin, etc., affords relief in the majority of cases. The outcome depends chiefly on the ability of the patient to overcome the infection; if this occurs, the bowel usually takes on its activity. In considering operation in relation to these cases, I have felt that there was little to be gained by it unless there had been evidence of active peristalsis.

In a few cases of paralytic distention, although the patient appears to overcome the peritoneal infection within the first three or four days, and peristalsis becomes active, with gurgling on auscultation, and definite gas pains, yet distention and vomiting persist. Enemata occasionally give rather unsatisfactory results; occasionally obstruction appears complete. In such a patient, who is rapidly losing ground in spite of appropriate palliative measures, surgical interference comes in question. These cases cannot be considered as pure mechanical obstruction, nevertheless there is a definite mechanical factor in addition to the sepsis (Cases 5 and 7).

In other cases the distention and discomfort following operation subsides, and the patient is apparently making a satisfactory convalescence. Toward the end of the first or during the second week, pain suddenly develops, followed by vomiting, distention, and evidence of increased peristalsis. Enemata become effectual. Acute mechanical obstruction has obviously occurred (Cases 3, 4, 6).

In the presence series, except in one instance, Case 1, I have operated only when obstruction persisted in spite of active peristalsis, as shown by well-marked cramp-like pain, gurgling on auscultation, or visible peristalsis. Such obstruction has occurred in under 2% of my own appendectomies requiring drainage, and in none of the undrained. Since, as we have seen, the probable cause of obstruction is fixation by recent adhesions, there is a natural tendency to persist for a while in palliative measures, in the hope that the obstruction will be overcome. The decision as to which cases will free themselves spontaneously, as well as when the proper time has come to interfere, is a difficult one. I feel very strongly that the conservative thing is to operate early. It is not claimed that the cases here presented would necessarily have died of obstruction, if not operated on. It is far better to operate occasionally unnecessarily, than to postpone operation until the later stages of obstruction have developed.

If the operation is undertaken, we have naturally greater latitude after clean appendectomies. In suppurative cases a fresh incision under local anesthesia internal to the original one is advisable. If bloody serum is found on opening the peritoneum a search for a strangulated loop of bowel is naturally suggested. If not, we now have two possible courses, first to find and free the point of obstruction, or second to provide drainage of the bowel, either externally or by a short-circuiting operation. If we look for the obstruction and separate the adhesions forming it, raw fibrinous areas are left on the bowel which immediately re-adhere elsewhere, the bowel distention persists, septic material may be spread from the drainage tract, the bowel wall may be extremely friable from distention and oedema, and tear, and lastly the operation may be severe for a reduced patient. Obstruction may persist or recur, and we may have only exchanged one obstruction for another, particularly if a segment of the bowel is partially paralyzed from sepsis. The obstruction may be short-circuited by ileocolostomy without disturbing adhesions. But this also means a considerable operation. Drainage of the bowel may be provided more directly and with far less disturbance to the patient by ileostomy under local anesthesia. It has the obvious disadvantages of faecal discharge, fluid-loss, frequent skin irritation, and possible secondary operation for closure. The whole question is how often when done for obstruction by plastic adhesions, will an ileostomy first relieve the patient, then close spontanously and so serve not as a palliative but as a curative procedure.

Of the seven cases, in one case a caecostomy was done on the third day under local anesthesia in a man of 45 with paralytic distention following appendectomy for gangrenous appendicitis with general peritonitis. Death followed in twelve hours. In a second, a child of ten, recovery followed reduction of an ileo-ileal intussusception occurring on the fourth day after a clean appendectomy. In the remaining five cases ileostomy was done. Four were children of eight or nine years, and one a man of 21. Obstruction occurred on the sixth to tenth day. One child had previous enterostomy through the original incision on the eighth day by another surgeon with temporary relief. A second ileostomy was done on the tenth day.

The technique was similar in all cases, an incision through the inner border of the right rectus or median line, choice of a distended bowel loop which appeared lowest and therefore nearest to the point of obstruction. In two cases, visible peristalsis gave a clue to the proper point of incision. In four cases, the peritoneal cavity was free from adhesions except in the neighborhood of the original incision. Enterostomy was done in all cases with a flanged glass tube and a purse-string suture, with no attempt to make a valvular opening to aid closure. I should, of course, in the future use the technique suggested by J. W. Long[1] or by C. H. Mayo,[2] to favor closure by means of inversion of the bowel well around a catheter, and by bringing the catheter, if possible, through omentum interposed between the bowel and abdominal wall.

The after-course in all cases was similar; with the relief of the distention, the bowel moved spontaneously on the third to fifth day. This strongly suggests, that in the type of cases operated on, an obstruction by angulation of the ileum, as described by Cheever,[3] existed. Fixation of the bowel probably occurred with angulation proximally. Distention of the bowel then made a valvular obstruction, which became all the tighter the greater the distention and the more active the peristalsis. With distention relieved, the bowel contents carried by the lateral enterostomy opening by bearing upon the point of obstruction, tended, aided by the subsidence of the inflammatory process and absorption of plastic exudate and oedema, to stretch and free the adhesions forming it. It also suggests the chief measure to be taken to avoid the development of obstruction, in addition to the obvious one of early operation, avoidance of trauma, and care in placing drainage, is the avoidance of active catharsis during convalescence. This becomes imperative if symptoms suggest partial obstruction. If the bowel contents are driven against a point of adhesion, overdistention and valvular obstruction are all the more likely to occur. Should obstruction develop, it also suggests that measures tending to relax the bowel, rather than stimulate it and increase local overdistention, are more likely to result in relief of the obstruction. It is in this way through relaxation of the bowel that the occasional relief of obstruction by spinal anesthesia probably occurs.

The after history of the five cases has been similar. The enterostomies all closed spontaneously in from four to seven weeks, although some of them seemed extremely unfavorable in the beginning. Their behavior would make me extremely slow to close a lateral enterostomy by secondary operation, provided satisfactory movements were taking place by rectum. One case reports well, by letter, after eight years, two after about three years, and one after one year. One case, after two years, is well except for a recurrent sinus in the original appendectomy wound. The ileostomy has remained healed. Relief of the obstruction in these cases has apparently been permanent.

No general conclusion can be drawn from so few cases, particularly since so large a proportion occurred in children, in whom the prognosis as to life and closure of the fistula may be more favorable than in adults. My own cases merely suggest that in the consideration of the treatment of obstruction, a distinction should be made between obstruction occurring shortly after operation and obstruction occurring from spontaneous causes, or long enough after operation for adhesions to cicatrize. The place of enterostomy is distinctly different in these two classes of cases. In the first class, its place as an evil occasionally necessary is clear. In the second class, obstruction by recent adhesions, it may be both palliative and curative. Good results depend on operation being undertaken early, and it is far better to operate on an occasional case unnecessarily than to postpone operation until the later stages of obstruction have developed.

Case 1. Caecostomy; death. A man, aged 45. Operation at Henry Heywood Hospital, Gardner, Mass., May 9, 1910, on fourth day of disease. Appendix adherent to brim of pelvis, perforated at tip. Abdomen contained a large amount of thin, gray, foul-smelling fluid. Drainage by three cigarette wicks. Persistent vomiting, distention, obstipation following operation. May 12th, cocaine anesthesia. caecostomy. Death in 12 hours.

Case 2. Reduction of intussusception; recovery. J. R., male, aged 10, patient of Dr. Joslin, Milford, Mass. Operation April 8, 1913, by another surgeon. Appendectomy without drainage for catarrhal appendicitis. Convalescence at first satisfactory. Bowels moved well on third day. April 12th, abdominal pain and distention began with vomiting. April 15th, obstruction complete for two days, vomiting faeculent for 24 hours. No blood from rectum. Operation: ether; median incision; peritoneal cavity clean and free from adhesions; beneath first incision an ileo-ileal intussusception, five inches long. Intussusception reduced. Good recovery.

Case 3. Ileostomy; recovery. L. F., female, aged 8, patient of Dr. H. C. Williams. Appendectomy with drainage Oct. 23, 1911, by Dr. M. H. Richardson, on the third day of the disease for retrocaecal appendix lying in a small abscess cavity. Drainage. Convalescence at first satisfactory. On the seventh night, colicky abdominal pain, increasing through the eighth day, with vomiting. No results from enemata. On the ninth day, distention with visible peristalsis. Operation by Dr. E. P. Richardson, ether; median incision, ileostomy without exploring or separating adhesions. On the fifth day movements began by rectum. Discharged on 48th day, with fistula closed. Patient reports herself entirely well Nov. 24, 1919.

Case 4. Ileostomy; recovery. Massachusetts General Hospital Record No. 186876. A man, aged 21; sick three days with abdominal pain. Admitted with temperature 103°, pulse 112. Immediate operation, January 2, 1913. Appendix found hanging over brim of pelvis, gangrenous in distal half and perforated. Abdomen contained thin pus, not walled off. Appendix removed. Cigarette drain to pelvis and appendix stump. Temperature normal on second day. Convalescence apparently satisfactory. On the tenth day, colicky abdominal pain; on the eleventh, pain more severe, abdomen beginning to distend, enemata ineffectual, vomiting. On the twelfth, condition similar, pain more severe in the evening, vomiting faeculent. On the thirteenth day, general condition serious, abdomen distended, its superficial circulation sluggish, distended intestinal coils visible. Operation: ether; incision through right rectus muscle to inner side of original incision. Peritoneal cavity clean. Glass tube tied in presenting distended bowel. Following operation, free discharge through tube. Bowels moved by rectum on fourth day. Gradual closure of fistula. Discharged on 48th day. Patient writes Jan. 23, 1914, wound healed completely three weeks after going home. General health excellent. No disabilities.

Case 5. Ileostomy; recovery. N. L., male, aged 9, patient of Dr. Duggan, Milford, Mass. Operation May 5, 1916, at Milford Hospital; removal of a gangrenous appendix lying in a localized abscess to the the outer side of caecum close to the abdominal wall; drainage. Convalescence unsatisfactory from the beginning with tendency to distention, occasional vomiting and abdominal pain. Enemata at first gave partial relief, but distention gradually increased, the vomiting became more persistent and faeculent in character. On the eighth day, enterostomy through the original incision by another surgeon. This resulted in a moderate amount of faecal discharge and slight improvement in general condition for a few hours. The distention and vomiting persisted, however, and the child's condition became desperate. On the tenth day ileostomy through an incision through the inner border of the right rectus muscle. The abdomen was free from adhesions except in the region of the original wound. Glass tube tied in distended loop of bowel running toward these adhesions. The vomiting and distention were relieved. Three days following operation, there was a free movement by rectum. Movements by rectum continued, the discharge through the two enterostomies, at first large in amount gradually diminished, and he was discharged on the forty-first day following the original operation, the enterostomies practically closed. His father writes, December 7, 1919, that the boy is well except for nervousness, the wounds have remained healed and he has no pain.

Case 6. Ileostomy; recovery. V. M., girl, aged 8, patient of Dr. Joslin, Milford, Mass. Appendectomy with drainage for acute appendicitis by another surgeon February 1, 1917. Temperature 101°, dropping to normal on third day. Convalescence as satisfactory until evening of the fifth day, when severe cramplike abdominal pain developed with repeated vomiting. Obstruction was complete for 24°, after which the bowels moved freely. On the tenth day, recurrent abdominal pain, with repeated vomiting. I saw her on the morning of the eleventh day when obstruction had been complete for 24°. Her abdomen was distended with prominent coils of small intestine visible in active peristalsis. Although it was obvious that this obstruction might relieve itself as the previous one had, it seemed safer under the circumstances to provide drainage. Operation, February 12th; ether, incision through inner border of rectus muscle. Abdomen free from adhesions except in region of old wound. Ileostomy by means of glass tube in loop of ileum as near as possible to adherent point of obstruction. Good recovery. Bowels moved freely three days later, and regularly thereafter. Gradual lessening of faecal discharge from ileostomy, which closed spontaneously before discharge on the thirty-fifth day. November 22, 1919, her father writes that she is well, the wound has remained healed, and that she has had no pain or discomfort from the operation.

Case 7. Ileostomy; recovery. Massachusetts General Hospital Record No. 216397; boy, aged 9. Operation, July 27, 1917; ether; appendectomy with drainage for acute appendicitis and diffuse peritonitis. A large quantity of thick free pus in abdominal cavity. Appendix gangrenous and perforated. Following operation vomiting ceased, and gas was occasionally passed, but moderate distention persisted and his condition was never satisfactory. On the fourth day, distention increased, partially relieved by enemata. On the sixth day, vomiting developed with marked abdominal pain. On the next day vomiting and pain continued. Enemata were without effect; distention was increased. Operation: median incision with novocaine anesthesia. Glass tube tied in dilated ileum with purse-string. Intestinal coils adherent with soft adhesions. The following day vomiting ceased, and distention was less. Five days after ileostomy there was a voluntary movement by rectum. The discharge from the ileostomy greatly decreased in the next ten days, and had almost ceased two days later. The boy was discharged on the thirtieth day, wound practically healed. His mother reports by letter November 23, 1919, that the boy's general health is very good, and that he has no discomfort except from a recurring sinus in his original appendix incision. The ileostomy has remained healed.

REFERENCES.

[1] J. W. Long: Trans. Southern Surgical Association, 1916, Vol. xxix, p. 59.

[2] C. H. Mayo: Annals of Surgery, 1917, Vol. lxvi, p. 568.

[3] David Cheever: Boston Medical and Surgical Journal, 1913, Vol. clxviii, p. 719.

THE SURGICAL TREATMENT OF ACUTE EMPYEMA BY VALVE DRAINAGE, PROVIDED BY FLAP OF SKIN, FASCIA, AND MUSCLE, UNDER LOCAL AND PARAVERTEBRAL ANESTHESIA.

By William Reid Morrison, M.D., Boston.

Most surgeons agree that operations involving the opening of the thorax should provide proper closure of the chest wall, to prevent air going in and out of the wound, causing partial collapse of the lung, mediastinal flapping, pneumothorax, and subsequent chronic empyema. At the same time, adequate drainage must be provided for collections of pus, whether free in the pleural cavity, encapsulated between the lobes of the lung, or walled off between the lung, spine, ribs, or diaphragm.

A valve of skin has been advocated by Dr. Fred B. Lund to prevent chronic empyema, which so often occurs after the old-fashioned method of making a direct opening in the chest with "collar-button," tubing or gauze drainage. The valve also eliminates considerable shock which would be present otherwise. Most satisfactory results have been noted by the author in civil practice by the use of this method.

Experience has convinced the writer that a flap of skin only, particularly in thin patients, is not as satisfactory as a valve of skin, subcutaneous fat, fascia, and muscle. The thicker flap occludes the opening in the thorax perfectly, while the skin flap alone tends to retract when the stitches are removed four or five days after operation. The skin flap only is infinitely preferable to the direct opening in the chest, and in most cases where a valve is used, the lung has expanded, obliterating any cavity which has not been of long standing, with thick, leathery walls.

Through the courtesy of Lieutenant Colonel Homer B. Smith, the author had the opportunity of operating on a consecutive series of acute empyema cases admitted to Base Hospital 51, of the Justice Group at Toul, France, during the war.

All of these cases were operated on under similar conditions. A hypodermic injection of one-quarter or one-sixth of a grain of morphine was given subcutaneously one-half hour before operation, according to the size of the patient. (Scopolamine, or atropine, one hundred and fiftieth, or one-hundredth of a grain may be given in addition to the morphine.) The instruments and sterile goods were arranged on the table, and the operator and assistants were ready to operate immediately, when the patient was brought to the operating room, to avoid delay. Benzine and half-strength tincture of iodine was used for skin preparation. As local and paravertebral anesthesia was employed in each case, Crile's anoci-association technique was carried out as far as possible, special care being taken to have neither display, nor rattling of instruments, which were hidden by sterile towels. The patient was placed in a half-sitting position on the operating table, with warmed blankets under, as well as over, the body and legs. Care should be taken that the patient does not roll on the unaffected side, in the recumbent position. Serious, if not fatal, embarrassment of respiration may result, due to compression of the over-worked opposite lung. This is caused by the mediastinum being pushed over by the pressure of the fluid in the infected pleural cavity. The author has seen a death in civil practice because of failure to observe this precaution. One-half of one per cent. novocaine solution was used, and when novocain was unobtainable, one-eighth of one per cent. cocaine solution. Paravertebral anesthesia, blocking the intercostal nerves combined with the local infiltration in the skin and underlying soft tissues in the region of operation, is the anesthesia of choice for this type of chest surgery, and in the writer's hands, it has proved most satisfactory.

This method of draining the chest by an indirect opening, with formation of a valve (whether or not a pleurotomy or rib resection is made) renders the operation painless, with little or no shock to the patient, provided the nerve impulses are thoroughly blocked by an experienced operator.

In the ordinary empyema cases which have pus free in the pleural cavity, the valve should be placed posteriorly, draining the chest by means of a pleurotomy through the eighth, or preferably the ninth interspace, or resecting the eighth, or better the ninth rib, if necessary. The dependent part of the chest is properly drained, with the patient sitting or lying in bed. The tenth rib may be resected, but injury to the diaphragm is likely to occur: if injured, it should be promptly sutured.

To make the valve, a six-inch skin incision is made parallel to, but a distance of one rib and one interspace below the rib or interspace selected. The underlying fat, fascia, and muscle are incised, and retracted upward the width of one rib and one interspace; the selected interspace is incised, or rib resected.

On opening the chest, pus is allowed to escape slowly, by the insertion of a gloved finger, and collections of fibrin, detritus, or foreign bodies are removed gradually. The position of the lung is determined, and adhesions between the lung and chest wall may be separated. The patient is told to cough, which usually brings the lung in close apposition to the chest wall. When the patient coughs, pus drains freely from the chest, and with each inspiration the valve of soft tissues closes over the opening in the thorax, causing a dimple over the resected rib, or interspace, thus preventing any inflow of air in the chest.

To insure subsequent drainage, a soft rubber tube two centimeters in diameter, and the width of the chest wall in length, is inserted in the oblique drainage tract. The outer end is sutured at its lower margin, to the inferior skin edge, with interrupted silk-worm gut sutures. The inner and outer ends of the tube of rubber are not cut transversely, but on a slant, and parallel to each other, making them flush with the chest walls. The skin incision is sutured loosely with interrupted silk-worm gut sutures, so that no tubing is seen at all. Gauze strips impregnated with boric ointment, or sterile vaseline, such as are used in the Dakin dressings, are placed about the wound to protect the skin, and plenty of gauze dressings are applied under a swathe. This dressing is not disturbed for several days, as advised by Dr. F. J. Cotton, but it is reinforced if necessary. On the third or fourth day, the stitches and tube are removed.

X-ray and fluoroscopic examinations were made before the operation and a series of plates were taken every three days afterwards; these plates demonstrated efficient valve drainage.

Four of my series were pneumococcus cases, all of which recovered.

1. Peter K., 2,418,856, Private, Company B, 147th Infantry. Eighth rib resected, posterior axillary line. (Seen at my office in November, 1919, in good health. X-ray by Dr. Samuel W. Ellsworth negative.)

2. Harvey S., Private, Company L, 18th Infantry. Ninth rib right resected, posterior axillary line.

3. John M., Private, Guard Company, 4th Repair Division. Ninth interspace left pleurotomy, posterior axillary line.

4. ——— ——— (name lost.) Tenth rib resection left, posterior axillary line.

One case of mixed infection, streptococcus and pneumococcus, John M., Private, Machine Gun Company, 139th Infantry, had ten centimeters of an exploring needle broken off in the lung by a medical officer. An encysted empyema was found in the anterior of the right chest, just above the diaphragm. Valve drainage was made through the anterior of the chest; the seventh rib was resected in the anterior axillary line, the needle was removed; the patient died a month later.

Another case of mixed infection: Private David F., 1,903,964, Supply Company, 326th Infantry, was operated on for gunshot wound of the abdomen, with perforation of the stomach, at a field hospital. On account of heavy shelling it was necessary to transport the patient to Toul, and in the ambulance, during a fit of coughing, he burst open the abdominal wound. The intestines were replaced in the abdomen and the wound resutured by the writer. Two months later during a stormy convalescence, the patient developed a left empyema, and he died two months after the operation.

There were six hemolytic streptococcus empyemas, of whom three recovered, and three died. At autopsy, Captain Pratt, the pathologist, was surprised to find no fluid in the affected chest, demonstrating the efficiency of the valve drainage.

Most of these cases, having seen active service at the front, contracted influenza while they were in poor physical condition, caused by exposure, poor nourishment, shell-shock, etc., with empyema following. Prostration was marked, the pulse often being 140 before operation, and each patient had the characteristic brownish watery fluid in large quantities.

1. Perry M. 2,846,421. Private, Company B, 342nd Machine Gun Battalion. Ninth interspace right, posterior axillary line. (Influenza and broncho-pneumonia at Field Hospital 148. Acute otitis media right.) Recovered.

2. Robert L., Private, 2,853,611, Company A, 360th Infantry. Eighth rib right resected, posterior axillary line. Recovered.

3. John E. H., Private, 2,005,423, 112th Infantry. Eighth rib right, resection in posterior axillary line. Died three days later.

4. William G., 294,987, Casual Detachment. Ninth rib resection, left posterior axillary line. Died three days after operation.

5. ——— ——— (name lost). Eighth interspace left. Pleurotomy, posterior axillary line, died in twenty-four hours.

6. ——— ——— (name lost). Eighth rib right resection, posterior axillary line. Recovered.

My impression is that the less done to these hemolytic streptococcus cases the better. Valve drainage is far better than the ancient direct opening in the chest, but I believe that the insertion of Kenyon's drain, as advocated by Willy Meyer, may become the operation of choice, with or without suction, in cases with free fluid in the chest. In my opinion many such cases are overwhelmed by the virulence of the infection, and they have not sufficient resistance to the hemolytic bacteria; such patients may die either with or without an operation. Fortunately hemolytic streptococcus empyema cases are rare in civil practice.

The wretched conditions, at times, in the active service of military life abroad were very different from those at home, consequently the spread of this virulent infection was increased and individual resistance was diminished.

At Camp Wheeler the writer had some experience with Carrel-Dakin irrigations; by its use the odor of the discharge was cleared up rapidly, and the wound rendered cleaner, but the convalescence was not materially altered. Irrigations had to be omitted in one case, because of violent coughing, caused by the solution, which was prepared freshly every day, and carefully titrated. It is very difficult to bring the solution in contact with all parts of a tortuous drainage tract after an open operation and this is one of the essentials for producing results by means of the Carrel-Dakin technique. Whittemore inserts rubber tubing through a trocar and irrigates with Carrel-Dakin solution, making use of negative pressure as well, in a closed method of draining the chest.

CONCLUSIONS.

1. The advantages of this valve drainage are:

a. An indirect valve opening is made in the chest.

b. A valve made of the living tissues themselves is the most efficient type, because it does not get out of order. Mechanical valves in aspirating trocars, and devices such as a rubber dam pasted on three sides of the wound, are less desirable.

c. In cases of pneumococcus and mixed infection, masses of fibrin, detritus and pus are readily removed. The gloved finger is able to break up any recently formed adhesions which may anchor the lung, and which may prevent its expansion. The patient is told to cough, and usually the lung expands readily, obliterating any cavity.

d. Foreign bodies, if any, may be extracted.

e. Collapse of the lung, mediastinal flapping and pneumo-thorax may be avoided.

f. More rapid convalescence, avoiding chronic empyema.

2. No empyema should be operated on before a careful consultation with the medical man in charge of the case.

3. Too early or too late operation is to be avoided. The duration, extent, and virulence of the process in the lung, embarrassment of respiration from large amounts of fluid, and progress of the case are the factors that influence the surgeon's judgment.

4. Local, combined with paravertebral injection, is the anesthetic of choice.

5. *a.* In pneumococcus cases, valve drainage with pleurotomy or rib resection with indirect drainage of the chest may be used to advantage.

b. In streptococcus cases, particularly in hemolytic streptococcus infection, Kenyon's tube, with or without suction, or repeated aspirations may be of value, allowing no air to enter the chest.

6. The surgical treatment should be supplemented by careful attention to a high caloric diet, principally milk and raw eggs for the first few days.

7. Medication in the form of digitalis leaves or other cardiac stimulants to tide over the lung infection, morphine for pain, tincture nux vomica as an appetizer, and later iron are given as indicated.

8. Good nursing, warmth, and fresh air are absolutely essential.

9. Early bottle-blowing and later proper gymnastic exercises are desirable to stimulate lung and chest expansion and prevent deformity.

10. A half-sitting position aids respiration and drainage after operation.

11. A direct opening into the pleural cavity should not be made in acute empyemata.

12. The writer has not been favorably impressed by the use of serological treatment.

CHEST CONDITIONS RESULTING FROM WAR WOUNDS AND THEIR SURGICAL TREATMENT.

By B. H. Alton, M.D., Worcester, Mass.

In writing this article it is my desire to bring before you a few conditions of the chest resulting from war wounds and their surgical treatment as practised in the British casualty stations in France.

War wounds of the chest vary in so many respects that an adequate description of them is almost impossible. Yet they have a similarity and present lesions of the same nature.

The type of wounds of the chest most frequently seen are those caused by bullets and shell fragments. The bullet wounds, especially the through and through wounds, are of little interest from a surgical point of view. The entrance and exit wounds are small and usually they go on to recovery without infection, or develop one of mild degree. Occasionally a bullet will carry into the lung a small amount of clothing which may later cause an empyema.

Wounds caused by shell fragments may penetrate the chest wall and lie on the surface of the lung, or bury themselves in the lung tissue at varying depths. Others may traverse the lung and pass through the opposite side of the chest causing much destruction in their flight. Others may cause a large wound on the chest wall which may gutter the lung, or a direct blow may fracture the ribs and cause a large wound on the surface of the lung.

One cannot judge from the size of the entrance wound just how much damage is done to the lung tissue. Oftentimes a fragment causing a more or less innocent entrance wound, tears a large ugly rent in the lung. Wounds of the lung often give rise to severe hemorrhage. Fragments tearing through the hilus and rupturing the great vessels of the mediastinum cause fatal hemorrhages. These are seldom seen at the advanced operating centers as they usually die on the field of battle.

If the entrance and exit wounds are closed and the lung is bleeding, the retraction of the lung and pressure of the haemothorax tend to check the hemorrhage. In these cases life is threatened less by the actual hemorrhage than by the compression of the heart and mediastinum causing a sudden dyspnea and probable death.

During the early period of the war these cases were usually treated by repeated aspiration which resulted in a high mortality. During the latter period of the war they were treated by opening the thorax and arresting hemorrhage by suturing the lung tissue which afforded perfect hemostasis. The latter method gave a much higher percentage of recoveries.

In the open thorax where free hemorrhage is present, it should be arrested at once by the proper surgical procedure. If the bleeding is coming from a parietal vessel, it should be ligated; if the lung is bleeding, suture of the lung tissue is indicated.

Secondary hemorrhage may appear up to several days after the primary hemorrhage has been arrested. This may be caused by allowing the lung to expand too soon after injury, or to a small piece of cloth retained in the track, causing an abscess with erosion of a large vessel following.

When the track of the fragment passes through the lung and where the damage is not excessive, the thorough cleaning of the track can be brought about by compressing the lung, thus bringing the exit and entrance wounds close together. A narrow strip of gauze is passed through the track which will remove necrotic tissue, pieces of cloth, and bone fragments. The entrance and exit wounds are closed by deep sutures. In this type of case, if the lung is allowed to expand too soon after repair a secondary hemorrhage is very apt to occur.

In the cases with gutter wounds or where the track is near the surface of the lung, the track can be excised completely and the lung surfaces brought together with deep sutures. In this type of repair the lung can be expanded immediately without danger of hemorrhage.

Two methods of expanding the lungs were used. Aspiration, which was done immediately following closure of the chest, or by inflation of the lung by the use of the small nitrous oxide apparatus. To expand the lungs with the nitrous oxide machine a close fitting mask is necessary. The anesthesia is given under pressure, which keeps the lungs expanded while the thorax is being closed. When the pressure is released the lungs remain expanded. I have not seen secondary hemorrhage occur where this method was used.

Many chest cases reach the casualty clearing station having a severe pulmonary hemorrhage. Usually they are in severe collapse, and many have large sucking wounds. Then the question arises,—can operation keep them from certain death? It has been definitely shown that an operation that is done rapidly, skilfully, and gently, saves many of these cases.

Surgical treatment of wounds of the chest has been greatly advanced during the war. As a whole they are treated like any other gunshot wound. Infection of the wounds of the chest and lungs is a great factor as in any other part of the body. The wounds show the same destruction and the same necrosis of tissue. Infection is carried into the thorax by the metal fragments, pieces of cloth, and bone splinters.

In war surgery the main object is to prevent infection of the wound. To accomplish this it is necessary to excise all devitalized tissue and to remove all foreign bodies.

In the earlier part of the war foreign bodies were not removed from the lung. Abscesses, pleuro-pulmonary infection, hemorrhage and empyema resulted. During the latter period of the war all accessible foreign bodies were removed with a marked decrease in mortality.

It has been definitely proved that a lobe of the lung can be delivered on the surface of the chest in the same manner as the abdominal viscera can be delivered on the belly wall. Manipulation of the lobe, incision, resection of devitalized tissue, suture and closure of the thorax is the accepted procedure.

The method generally used in extracting foreign bodies from the lung is to deliver the lobe and then compress the lung gently between the thumb and fingers. In this way the foreign body can be felt and it can either be removed through the track made by the missile or through an incision made over it. It is not enough merely to extract the fragment of metal from the lung tissue, for in its flight it usually carries with it pieces of clothing and bone splinters, which, if not removed, may set up a grave septic condition.

The cleansing of a gutter wound or of a track near the surface of the lung is a comparatively simple matter, as the whole track can be excised and the surfaces brought together with deep sutures. When we are dealing with a through and through wound of the lung a much different problem confronts us.

The entrance and exit wounds can be cleaned and sutured. Here we are taking a chance and hope that the infection in the track will be taken care of. At least the pleural cavity is being shut off from the infection from the lung.

In most through and through wounds of the lungs the track can be cleaned by the gauze method. However, if the track is easily accessible a complete excision is the surer method. The results have been much more satisfactory where the track has either been cleaned with gauze or by complete excision.

It is very essential that the lung surfaces should be carefully examined for splinters of bone that have punctured the pleura. Oftentimes they are seen sticking into the lung and some are driven beneath the surface. Most of these splinters carry infection due to contact with the missile, and if left in the lung, abscesses often develop around them.

Many of the chest cases have open wounds; they are spoken of as the open thorax, blowing or sucking wounds. Air passes in and out during each respiratory movement. These cases call for immediate operation as it protects the pleura against infection from without and also lessens the possibility of asphyxia, which often happens in an open thorax.

To lessen these two possibilities precautions were taken during the latter part of the war by having the open wounds plugged with gauze or the skin sutured over the opening at the advanced dressing station. As a rule, when these cases arrived at the casualty clearing stations, they were fit for immediate operation, and a fewer number of pleural infections resulted.

Surgical Procedure. Experience has shown that there is little to fear in allowing the air to enter the pleural cavity with complete collapse of the lung. It is necessary to handle the lung, to inspect it, to incise it, and to swing it about on its pedicle. In order to do these various things, the lung must be in a state of collapse.

All these maneuvers mentioned above, if they are made with gentleness, have no influence on the action of the heart. The respiration maintains its normal rhythm, frequency, and amplitude, and shock is at a minimum. General anesthesia is the method most frequently used, —nitrous oxide anesthesia is the method of choice, but chloroform and oxygen give very good results. Local anesthesia is used in suitable cases.

To remove thoroughly all the damaged and infected tissue of a wound of the chest, the wound must be completely resected. With large scissors the skin is removed from one-fourth to one-half inch from the edge of the wound. The damaged fascia, fat, and muscles are likewise removed. The opening into the thorax usually involves at least one rib. The fractured ends are removed well back from the damaged portions by means of bone forceps.

When the wound is thoroughly excised, it is enlarged to admit the hand. The removal of five inches of one rib is usually enough to admit the hand and to allow for free manipulation and delivery of the lung. Retraction on the neighboring ribs, above and below, widens the opening in the chest, making manipulation less difficult.

To deliver a lobe of the lung it is gently seized with light, elastic, non-crushing forceps, and by gentle rotary movements the lobe is delivered through the opening. It is received immediately in warm moist compresses, and is then carefully inspected on all its surfaces. After the lesion is located the opening into the thorax is plugged with wet gauze to obviate the to and fro movements of air during operation.

Gutter wounds, and tracks near the surface of the lung are completely excised. Large bleeding points are ligated, the general ooze is stopped when the lung surfaces are approximated by deep sutures.

This is best accomplished by using a large curved, non-cutting needle. A running stitch is used, and care must be taken to include the depths of the wound, and also to approximate accurately the pleural edges. These sutures should not have too wide a bite, in order to guard against their tearing through lung substance during inspiration, when tension is put on them.

When the foreign body is retained in a lobe, it is compressed with the hand, the foreign body is either removed through the track or an incision is made over it. The entrance of the track is excised, and it is thoroughly cleansed of all necrotic tissue, cloth and bone fragments. The entrance of the track is closed with deep sutures. The through and through wounds are treated in like manner, unless the track is near the edge of the lobe, and then it should be completely excised.

Each lobe should be examined separately. When all the damage has been repaired the lung is replaced within the thorax. The pleural cavity is then emptied of blood and clots. The blood is best removed with wet gauze well rung out. The clots are removed by sponges held in long forceps. Every portion of the cavity must be thoroughly explored and all clots removed.

The thorax is closed by muscle flaps. The muscles are sutured in one or two layers. The closure must be air tight. The air in the pleural cavity can either be removed at the time the thorax is being closed or later, by aspiration as described above. Spontaneous absorption of the air proceeds quite rapidly, but is not completely effected for several days. As a rule, the patient breathes more quietly and suffers less when the pneumothorax has been done away with.

After operation and closure of the thorax serous exudate usually appears. Repeated tappings often clear up this condition. In other cases exudate continues to accumulate and may become purulent. If the lung is kept more or less expanded by repeated tappings until adhesions take place to the chest wall, the empyema cavity becomes walled off, then free drainage is indicated.

In the early part of the war thoracotomy was practised on the lines of the civil operations for empyema. A small portion of the rib resected, the contents of the empyema cavity evacuated, and a large drainage tube introduced. Cases treated in this manner often remained with open wounds for weeks and months.

Later the Carrel-Dakin treatment was used. Instead of one large tube, several small tubes were placed at varying intervals over the cavity. Some gauze loosely packed around the opening and a return flow assured drainage of excess fluid. Dakin's solution was allowed to flow into the cavity in the usual manner. Cases treated with this method had a much shorter convalescence, the wounds were ready to close at the end of ten days to two weeks after treatment was begun.

All chest cases, whether they were being treated by the expectant or operative method were immobilized in a semi-recumbent position. Movements of all kinds are to be avoided, and therefore retention of the wounded man at the casualty clearing station for many days is very necessary. The fact that in the first two days the deaths are due chiefly to hemorrhage, and in later stages to sepsis, must direct the timely and appropriate treatment.

* * *

Public Health Service Appointments.—It has been announced that Dr. Rupert Blue, former Surgeon General of the Public Health Service, and Senior Surgeon Joseph H. White have been nominated assistant surgeons general at large of the Public Health Service.

Clinical Department.

A SEVERE CASE OF GAS BACILLUS INFECTION WITH RECOVERY.

By Donald S. Adams, M.D., Worcester, Mass.,
Resident Surgeon, Memorial Hospital.

[From the Surgical Service of Memorial Hospital, Worcester, Mass.]

Gas bacillus infection has for a number of years been a well defined surgical entity, but the war has shown us this type of infection in a far more realistic way. For this reason we should be more on the alert to detect its presence, and get ahead of it if possible; or at least treat the accompanying toxemia with more understanding. As gas gangrene is noted as a complication of wounds seen in civil practice, both in the city and country, it should interest everyone alike.

On the night of October 19, 1919, Mr. B. was admitted to the hospital on the service of Dr. B. H. Alton, with a diagnosis of gunshot wound of left leg. That afternoon, while hunting, he had dropped his gun, the hammer striking the running board of the automobile and the charge from a 16-gauge shell entered his left leg below the knee. Within the hour he had medical attention; the hemorrhage, which was severe, was controlled by a tourniquet. He was sent to the hospital, and in so doing, had to travel about 50 miles in an open machine.

Examination showed a man 33 years of age, well developed and nourished, but in a severe state of shock. His temperature was subnormal, pulse 132, respirations 30, and blood pressure low. In addition he was very cold, due to the exposure. He was warmed up by the application of heaters and blankets; stimulants, as caffeine, camphor and oil, and strychnia were given, and the severe pain eased with morphia. Antitetanic serum 3000 units also was given intramuscularly at this time.

The affected leg showed a ragged wound of entrance on the inner aspect of the upper third of the tibia. No wound of exit was found although a small hematoma in the popliteal space showed the position of the retained charge. Powder marks covered the upper leg, and the tibia was badly comminuted. Complete anesthesia existed below the knee, and no pulse could be made out in the dorsalis pedis or posterior tibial arteries.

At this stage the patient had not reacted enough to warrant any surgical procedure, so he was given 1500 cc. of normal saline containing 2% sodium bicarbonate by vein.

This treatment brought about a fair degree of reaction. Advantage was taken of this, and the leg prepared for operation with benzine and iodine. Light ether anesthesia was given, and a debridement was done, beginning at the wound of entrance. Loose fragments of bone were removed, damaged tissue excised, and the track of the charge cleaned to the popliteal space. A large amount of shot, wadding, and bits of the patient's clothes were removed.

A counter incision was made over the popliteal space and the hematoma turned out. The end of the track lay between the two heads of the gastrocnemius muscle, and at that point the popliteal artery and vein were found to be completely severed. The artery and vein were tied above and below, all damaged tissue excised, and the track packed with gauze soaked with Dichloramine-T 5%. The leg was immobilized on a long posterior wire splint, and the patient sent to the ward in fair condition.

The patient's condition remained about the same for eight hours after operation. The temperature was then 103°, pulse 130, and the typical appearance of shock again manifested itself. In addition he showed evidence of sepsis, with occasional periods of delirium. His skin was rather yellowish, suggesting hemolysis.

He was removed to the operating room and under local anesthesia given 825 cc. of fresh blood, paraffined tubes being used. Following this, signs of shock rapidly diminished and the color improved, although toxemia persisted.

His condition remained the same until the evening of the 20th, about 24 hours after admission, when his temperature rose to 104°, and symptoms of severe toxemia prevailed. He was delirious almost constantly. The dressing was not taken down at that time because of the patient's poor condition.

The lower limb, however, was devoid of circulation, and amputation was planned for the following morning. Another suitable donor was procured, and about 36 hours after admission he was again etherized. At that time the patient had to be restrained, and was in very poor condition.

On removal of the dressing the affected limb was found to be grossly infected with a gas forming organism. Well defined crepitus was elicited below the knee, with discoloration on the inner surface of the thigh, extending to the perineum. The wounds discharged a thin brownish fluid with a distinct gassy odor.

The case appeared hopeless, but to give the man the benefit of the doubt, a guillotine amputation was done about mid-thigh, with preservation of skin-flaps. Dichloramine-T dressings were applied to the raw surface. During the operation 800 cc. of fresh blood was given as described above, followed by 1500 cc. of normal saline containing 2% sodium bicarbonate.

Following this treatment the patient improved. He began taking fluids by mouth, and retained Murphy drip, containing 5% sodium bicarbonate. Within 10 hours he was again rational, and the infection had not progressed. A dressing was done and Dakin's solution substituted for the Dichloramine-T. Six perforated tubes were used and the instillations given hourly. From then on, the patient rapidly improved. Evidence of infection about the perineum and upper thigh disappeared. The stump granulated in well without infection of the end of the femur. As soon as the count was low enough, secondary suture was done under gas oxygen anesthesia. The result was excellent. At the present time the patient is ready for discharge.

In summarizing this case, we are interested in noting that we have a patient who, having received a gunshot wound, develops gas gangrene up to his perineum and groin within 36 hours. A type rapid in its advance, and yet controlled by amputation through, and not above, the active process. A case so far advanced as this would have been considered hopeless in France, and relatively few recovered, even when the most radical measures were employed.

It is difficult to explain this unless we can say that the organisms found in this country are less virulent than those obtained from the much worked over soil of Europe. Or, again, symbiosis may take a part. In the above case the bacillus was grown together with a slight growth of staphylococcus aureus. Had there been streptococcus present, there might have been a different outcome, for it was well recognized that those cases of gas bacillus infection seen abroad where streptococcus, especially the hemolytic type, was found, the prognosis always was very bad. This was explained by the fact that the streptococcus aided the growth and progress of the gas-forming organisms, or vice versa; or the combined toxins of the two strains were too much for the patient's powers of resistance.

The treatment consisted of giving blood to replace blood lost and to raise resistance. Sodium bicarbonate solution was used to dilute toxins and to hasten the elimination of acid bodies. Heat is always essential in cases of shock.

The use of Dichloramine-T and Dakin's solution with final secondary suture, is but the outgrowth of the war. It has, and I hope it will continue to have, a place in civil practice in certain types of cases.

In conclusion I might say that, had a lower third amputation been done on admission, gas infection might not have manifested itself. However, it was hoped that the anastomosis would take care of a portion of the upper part of the leg, thus giving a more useful limb, as the knee-joint was unimpaired.

I desire to thank Dr. Alton for the privilege of reporting this case.

Book Review.

War Wounds of the Lungs: Notes on their Surgical Treatment at the Front: By Pierre Duval: With 27 plates and illustrations. Authorized English translation. New York. William Wood and Company. 1918.

Duval presents a small book, less than one hundred pages, well printed and exceptionally well illustrated. He advances the theory that "Surgery of the lung takes its place amongst the recognized procedures of general surgery; and that the surgery of gunshot wounds of the lung must be governed by the priciples of surgery as applied to any other gunshot wound; that is to say, removal of all foreign bodies (metal fragments, splinters of bone, pieces of clothing), excision of the wound, and complete suture." This, he says, is revolutionary, but it does not seem to be quite so revolutionary as he at first suggests, since there are a considerable number of contraindications for operation He believes it better not to administer a general anesthetic, local or regional being preferable.

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THE REGISTRATION OF PHYSICIANS.

The successful practice of medicine consists in the application of facts which have been acquired in medical schools and applied in hospitals under supervision. Although the success of an individual may be increased by his natural ability and individual brightness it is practically impossible for one to furnish the public proper service unless his fundamental medical training has been good.

It has been suspected for some time from the evidence met with in hospital practice and elsewhere that many practitioners of medicine are not employing all the aids to diagnosis and treatment that should be used. This suspicion was confirmed in the recent war by the discovery that many of the physicians who entered the service were not able to perform properly the various procedures demanded by the medical department of the United States Army.

A study of this question revealed the fact that these physicians had not been thoroughly trained in the fundamentals of medicine and had not had the opportunity to apply the knowledge by hospital training. A persistent and successful effort has been made in recent years to force the medical schools of the country to improve their standards, and the tendency towards demanding a year's interneship in a hospital as a requirement for practice is strongly marked.

In addition the various states have attempted to protect the public from poorly trained physicians by the establishment of boards of registration to examine candidates to see if they are fit to practice. The boards act in accordance with the existing laws in regard to the registration of physicians in the different states. These laws should include not only a statement in regard to the character of the medical course required but also a statement in regard to the premedical requirement. By this latter method alone it is possible to force the poorly equipped schools to improve. For with a sufficient premedical requirement a student will be qualified to enter a number of what might be termed Class A schools and therefore the poor schools would be forced to improve in order to attract students

It is now pretty generally conceded that a student cannot successfully complete the work of the first year of a proper medical school without a preliminary training in physics, chemistry, and biology, and therefore to allow a student to enter a school of medicine without this preliminary training means that the student will be handicapped throughout his medical career by a poor medical training. There is nothing more pathetic than the earnest student who has been lured into a poor medical school with the hope of saving some time in preparation, only to find when it is too late that his preparation has not fitted him to make a success of his life's work.

Massachusetts has been behind most of the other states in adding a premedical requirement to its laws for registration in medicine. Recently there has been presented to the legislature a bill (House No. 1173) which provides for a premedical requirement as follows:

> Graduation from a standard high or secondary school and satisfactory completion of at least two years of study in a college of liberal arts or scientific institute or school recognized

as reputable by the department of education of this Commonwealth, which college of liberal arts, institute or school, has required not less than nine hundred and sixty hours of work during the said two years. An applicant who offers evidence of study under the provisions of this section must have devoted not less than one hundred and ninety-two hours to the study of chemistry,one hundred and twenty-eight hours to the study of physics, one hundred and twenty-six hours to the study of biology and ninety-six hours to the study of English composition and literature.

This bill was formed as a result of a conference between representatives of the Massachusetts Medical Society, the Massachusetts Homeopathic Medical Society, the State Board of Registration in Medicine, the Boston University School of Medicine, The Harvard Medical School, and the Tufts Medical School, and has the backing of these various organizations. The School of Osteopathy and the State Osteopathic Society were invited to the meetings and asked to join in the support because the courts of Massachusetts have held that the practice of osteopathy was the practice of medicine and that therefore these practitioners should be subject to the same laws as other physicians. Unfortunately these organizations did not care to support this bill.

It is hoped that this bill, which is backed by so many various medical elements in the State and which is designed not only to protect the public from improperly trained practitioners, but also to protect the student from wasting his time and money in poor medical schools, will receive favorable action by the legislative committee and that every physician will urge upon his representative the importance of its passage.

THE PALMER MEMORIAL FOR INCURABLE DISEASES, INCLUDING CANCER.

In recognition of the need of a refuge for persons suffering from incurable diseases, including cancer, the New England Deaconess Association has secured the coöperation of the Cullis Home in Roxbury. At the present time there are in Boston under Protestant management only twenty-four beds which may be occupied by patients suffering from cancer whose cases are beyond cure and whose death is certain, and none of these is for men. The records of the State show that there are no additional opportunities for care under Protestant management within Massachusetts. The Holy Ghost Hospital in Cambridge, under Roman Catholic auspices, has one hundred beds for incurable patients, including cases of cancer.

The Cullis Home was founded by Dr. Charles Cullis in 1864 and incorporated in 1871. The estate consists of sixteen acres of land, situated opposite Franklin Park, in a location admirably suited to its purpose. Dr. Cullis was one of the first to recognize the desperate needs of the consumptives, and established the Cullis Home for their care, giving his services and financing the enterprise through the application of his entire income and the gifts of friends. Only consumptives in the last stages of the disease, and without means of support or friends able to care for them, were received. Now that the State has recognized the obligation to such persons, the Cullis Home is free to include among its patients other incurable patients. The institution will be conducted in future by both the Cullis Home Association and the New England Deaconess Association; the purpose of the Cullis Home trust funds, with which the buildings were erected, will be carried out, and the Deaconess Association will be able to realize more fully its wish to minister to the sufferings of incurable patients. It is hoped that one million dollars can be raised for carrying on the future work of the Association. Patients will be admitted without restrictions either in regard to nationality or religion.

The charter of the New England Deaconess Association permits it to "provide a home for those needing refuge, care, or shelter, and to make contracts therefore with such as are able to pay for the same, and devise and carry out plans for the protection, relief, education and training of neglected, poor, sick or unfortunate persons." This purpose has been kept in mind and the work of the hospital has been pursued with gratifying success. Every year about two thousand patients are turned away because of lack of beds, and the need for the care of incurable cases has grown increasingly acute.

The financial burdens of the New England Deaconess Association have been so heavy because of its war deficit and its constantly growing work that probably it would have felt it necessary to defer the assumption of additional obligations just at this time, had not the facts brought to light by the experiences of Mrs.

Jennie C. Palmer revealed the great necessity of undertaking this new work at once. Cancer is one of the most distressing of incurable maladies; and the American Society for the Control of Cancer has estimated that "cancer is of greater frequency at ages over forty than tuberculosis, pneumonia, or typhoid fever. One woman in eight and one man in fourteen over forty years of age dies of cancer." The need which will be filled by the Palmer Memorial for Incurable Diseases, including Cancer, is a great one, and it is hoped that the New England Deaconess Association will be supported generously in its endeavor to provide institution and hospital care for one of the most unfortunate classes of human sufferers.

BULLETIN OF THE LEAGUE OF RED CROSS SOCIETIES.

We have received recently from Dr. Richard P. Strong, General Medical Director of the League of Red Cross Societies, Geneva, a copy of one of the first issues of the *Bulletin* of the League of Red Cross Societies, describing the character of the work which the League hoped to undertake in connection with international public health problems. Announcement is made that the first meeting of the General Council of the League will be held at Geneva on the second day of March, 1920, for the purpose of appointing additional governors and for discussing the progress of the League along the lines indicated at the Cannes Conference and its general policy of future development.

The *Bulletin* is of international interest, inasmuch as letters and communications from various foreign countries are published in its pages. Contributions to the present issue include interesting articles describing the anti-typhus campaign in Poland, the health campaign to be conducted in Eastern Europe by the Swedish Red Cross, the methods adopted by the Spanish government in the prevention of infectious diseases, the activities of the French Red Cross in the campaign against tuberculosis, the Italian Red Cross Sanatorium in Pozzuali, and the dèvelopment of the Chinese Red Cross.

The future columns of the *Bulletin* of the League of Red Cross Societies will make known not only the special problems of individual countries, but also various health problems of international importance in the solution of which the Red Cross Societies of all countries may coöperate.

MEDICAL MATTERS BEFORE THE LEGISLATURE.

A few weeks ago the Journal in an editorial article expressed the opinion that physicians had no special right to be heard on the social aspect of the question whether it was wise for the state to undertake the policy of maternity aid. On the medical aspects of the question physicians ought to interest themselves.

Today we wish to call attention to two reports from the Committee on Legislation, one published a week ago on health education, the other in this issue on vaccination, and to urge upon the medical profession their right and duty to make themselves heard as physicians on these matters. Vaccination against smallpox and the physical well being of our school children are matters of such prime importance to the state that every physician should do all in his power to lay before the members of the Legislature and the general public the whole truth regarding these subjects. There is no question whatever but that the Legislature would enact laws extending vaccination to all school children if the medical profession as a whole impressed upon their senators and representatives the need and reasonableness of such action. The efforts of the Joint Committee on Legislation, together with the work of the auxiliary members of the committee, does a great deal, but if four thousand physicians instead of a hundred informed themselves of the wonderful results of vaccination sufficiently to lay the facts before the public and all the members of the Legislature the health of the state would be safeguarded along this line as never before.

As regards the physical training of school children, all that need be asked is an absolutely impartial consideration of the bill presented by Senator Chamberlain. Massachusetts has a very large urban population. She has a very large foreign population, many of whom come from the mild sunny climate of the Mediterranean. These people, accustomed at home to a free outdoor life, are often crowded into tenements which have little sunshine, and offer no real opportunity for any outdoor life. The children suffer in health. The conditions found by the draft boards were a shock to our self-complacency. The Chamberlain bill is one step toward making such conditions impossible in the future. The bill avoids all the objections raised at the hearings against some of the measures proposed. It is a simple easily understood bill to better the physical condition of school children. It has no other motive whatever. It is not easy to understand the determined opposition to the measure. Here again, if the physicians of the state could but present the facts to the public, all opposition to the bill would be swept aside. Earnest aggressive effort alone is required.

BIOGRAPHY OF SIR WILLIAM OSLER.

Lady Osler has requested me to prepare a biography of her husband, and I will be most grateful to anyone who chances to see this note, for any letters or personal reminiscences, or for information concerning others who may possibly supply letters.

Copies of all letters, no matter how brief, are requested, and if dates are omitted it is hoped that they may be supplied if possible.

If the originals are forwarded for copy they will be promptly returned.

Harvey Cushing, M.D.,
Peter Bent Brigham Hospital,
Boston, Mass.

MEDICAL NOTES.

Massachusetts Health Report.—The annual report of Dr. Eugene R. Kelley, commissioner of public health of Massachusetts, shows that the lowest typhoid fever rate known to medical history in the United States has been reached in Massachusetts, that tuberculosis is declining at a reasonably rapid pace throughout the State, and that the mouth hygiene activities inaugurated by the health department are demonstrating their value already. On the other hand, the report states that the average infant in New York has nearly a fifteen per cent. better chance of survival than the average Massachusetts baby, and that the death rate from diphtheria is still needlessly high.

The three following extracts from the report, summarizing the typhoid, tuberculosis, and diphtheria problems, are enlightening:

"Eternal vigilance is the price of freedom from typhoid epidemics. In this field the policy of constant watchfulness by the district health officials and epidemiologists and the increasing efficiency of the local boards of health, working in closest possible coöperation with our staff, shows such striking results that they are obvious at a glance. Assuming that the present machinery for disease prevention is maintained and gradually improved, I can see no good reason why we may not predict with some confidence the practical extermination of endemic typhoid in this commonwealth within the next decade."

"The tuberculosis problem is inextricably interwoven with the problem of child hygiene and especially with the problem of childhood and adolescent nutrition. For this reason, as well as for many others, I feel it should become a major policy of this department to foster and stimulate in every way all movements designed to improve the nutrition of the growing child. Small but not insignificant beginnings of work in this special field have been inaugurated by the division of hygiene, but it is to be hoped that this department, educational authorities, all boards of health and many other organizations may expand nutritional work to a very great extent in the immediate future. In the field of adult pulmonary tuberculosis the great objective may be summed up in the problem of 'getting them earlier.' The chance of cure or undefinite 'arrest' of consumption by a period of treatment in our tuberculosis institutions bears almost a direct geometrical ratio to the promtness with which the disease is recognized and the patient admitted."

"Diphtheria is perhaps more definitely controllable than any other serious disease of an acutely infectious nature. By laboratory methods it is possible to detect its presence, to detect its carriers, to determine what individuals are susceptible to it, and by simple and harmless methods to render artificially such susceptible persons immune for long periods of years, to combat the poison of the disease with complete success by means of antitoxin if this is administered within the first 24 hours. With this in view, the department has again inaugurated an intensive campaign designed to arouse the public as to the importance of having every 'suspicious' sore throat seen early by a competent physician."

Election of Dr. Ludvig Hektoen.—The Pathological Society of Philadelphia has elected as an honorary member Dr. Ludvig Hektoen, of the John McCormick Institute for Infectious Diseases, Chicago.

Personal Characteristics of Sir William Osler.—An article in a recent issue of the *Medical Press* mentions the tributes paid to the personal characteristics of the late Sir William Osler, and in particular, to his love of books, at the twenty-seventh annual meeting of the Bibliographical Society, of which he was the president during the last seven years of his life. The following extract is of interest:

> Sir William Osler had remarked, on the celebration of his 70th birthday, in July last, that the love of his life had been divided equally between books and men. Of his eminence in his profession, of his great powers of intellect, his organizing capacity, and his immeasurable friendliness and kindliness, a great deal had been said by the Press; but mention of his purely literary side had been singularly lacking. As the president of that society for more than double the period which had been allowed to any of his predecessors, he had carried on its life with a generosity and a contribution of his own energy of which one could not say too much. He was one of the mainstays of the Bodleian, and a constant friend to it; that library was his admiration and delight, and whenever there was an adequate opportunity of obtaining some treasure for it he gave help not only from his purse but by writing to the Press and arousing interest. Three high principles in particular Sir William Osler set before himself: one was to carry out the golden rule by acting towards his patients and all men as he would they should do to him; another was to acquire equanimity alike in success and in failure; and a third was to do the present day's work well, not caring too much about the future. Sir William had a wonderful way of appearing to place his time at the disposal of those to whom he came, and he accompanied that behaviour with looks and words of rare compassion to those who were in ill ease, of true encouragement to those who were striving with difficulties, and with most real sympathy to those who were in doubt or trouble. Surely such conduct was near akin to the Divine. His great powers were always associated with the truest kindness, and the whole of his life was given to the welfare and betterment of his fellows."

Honor for Dr. E. V. McCollum.—Dr. E. V. McCollum has been made corresponding member of the Académie Royale de Médecine de Belgique. Dr. McCollum is the professor of chemical higiene of the School of Higiene and Public Health, Johns Hopkins University.

Appointment of Dr. H. D. Thomason.—Dr. H. D. Thomason, recently retired as Colonel in the Medical Corps of the Army, has assumed the duties of Superintendent at Flower Hospital, New York City.

Frederick A. Packard Lecture.—The annual Frederick A. Packard Lecture of the Philadelphia Pediatric Society was delivered by Sir Arthur Newsholme at the College of Physicians on February 10. His subject was "Neo-Natal Infant Mortality."

Appointment of Dr. H. G. Fitzgerald.—Dr. H. G. Fitzgerald has been appointed professor of hygiene at the University of Toronto. He will succeed Dr. J. A. Amyst, who has received an appointment as deputy minister of health in the Federal Department of Health, Ottawa.

European Health Conditions.—Dr. Hugh S. Cumming, Surgeon General of the United States Public Health Service, succeeding Dr. Rupert Blue, returned from his duties in Europe to assume his new position in Washington on March 10. For two years Dr. Cumming has been in Europe, acting as the official representative of the United States Government on various international health boards, and studying conditions of disease and public health.

In regard to the epidemic of typhus fever which is spreading over many Asiatic countries, Dr. Cumming is reported to have said that typhus, far from being checked seems to be increasing so that there is imminent danger of the epidemic invading Europe on a large scale, unless the strictest quarantine regulations and other control measures are enforced. Once the disease were entrenched at European ports, the next danger point he believes, would be the United States, although it is probable that it would not be difficult to check typhus even if it should invade America, because of different living conditions here. Dr. Cumming advises that nothing should be left undone to keep out bubonic plague, for at the present time this disease is present in practically all the Mediterranean ports, and constitutes a serious menace to this country. European health authorities consider the quarantine regulations of the United States so well adapted to check the invasion of either typhus fever or bubonic plague, that these regulations have been recommended for adoption by other nations.

Referring to international health relations, Dr. Cumming is said to have stated that an agency will be established soon under the

League of Nations, which will coördinate and strengthen the health work of all nations, and will improve particularly the reporting of diseases and the maintenance of quarantine between nations.

A meeting is to be held in London on April 12 to which official representatives of the health departments of various nations have been invited, It is believed a permanent organization will be formed at that time. The United States will send a representative to this conference.

American Posture League.—At the annual business meeting of the American Posture League held on Saturday afternoon, March 13th, the following officers were elected: President, Jessie H. Bancroft; Vice-President, Frederick R. Green, M.D.; Secretary, Henry Ling Taylor, M.D.; Treasurer, George J. Fisher, M.D. Executive Committee: Jessie H. Bancroft, Frederick R. Green, M.D., Eliza M. Mosher, M.D., George J. Fisher, M.D., Henry Ling Taylor, M. D.

The annual public meeting for the League has been postponed to the week of April 5th when the American Physical Education Association holds its annual Convention in NewYork.

The National Anaesthesia Research Society.—At a meeting of the Board of Governors of the National Anaesthesia Research Society held in Cleveland in March, it was voted to have the annual convention of the Society at Pittsburg the week of October 4, this meeting to be in conjunction with that of the Inter-state Anaesthetists Association, and the Pennsylvania Medical Society. It is possible that the Western Pennsylvania Dental Association also will join in the meeting.

In order to augment interest in the primary purpose of the Society, which is research, the Governors voted $200 to be apportioned in prizes for the best papers on research in anaesthesia, such papers to be read at the national meeting. This offer is open to all students, surgical, medical, and dental practitioners in the United States.

Canvas of hospitals having revealed need for a uniform anaesthesia chart, a committee of three was appointed to prepare forms. The committee consists of Dr. A. F. Erdman of Brooklyn, Dr. A. H. Miller of Providence, and Dr. E. I. McKesson of Toledo. It was also decided to prepare and publish at the earliest moment possible a monograph on the best practices in anaesthesia in obstetrics.

Announcement was made of the acceptance of the following well-known physicians, dentists, and anaesthetists as members of the research Committee: Dr. F. C. Mann, Rochester, N. Y.: Dr. John Evans, Buffalo, N. Y.; Dr. A. E. Guedell, Indianapolis, Ind.; Dr. William Harper DeFord, Des Moines; Dr. W. E. Burge, University of Illinois; Dr. Wm. Hamilton Long, Louisville, Ky.; Dr. J. Griffith Davis, Baltimore, Md.; Dr. J. J. Buettner, Syracuse, N. Y.; Dr. Tyler, Philadelphia; Dr. Isabella C. Herb, Chicago; Dr. A. F. Erdman, Brooklyn; Dr. A. H. Miller, Providence; Dr. W. B. Howell, Montreal, Canada; Dr. R. S. Hopkinson, Milwaukee; Dr. Oel E. Lamphear, Kalamazoo; Dr. W. I. Jones, Columbus; Dr. Theo. Casto, Philadelphia; Dr. S. P. Reimann, Philadelphia; Dr. John Polak, Brooklyn, N. Y.

BOSTON AND MASSACHUSETTS.

Physicians in Government Service.—The Civil Service Commission recently advertised for physicians in the Government Service. There are at least two vacancies in Boston, and physicians interested can get detailed information from the local Secretary of the Civil Service Commission, at the Custom House, 15th floor, Boston, Mass., or from Dr. J. A. Nute at the U. S. Immigration Station, Long Wharf, Boston,

Public Bequests.—By the will of the late Miss Helen L. Stetson of Lynn, the Massachusetts Homeopathic Hospital will receive five hundred dollars and the Lynn Hospital three hundred dollars.

NEW ENGLAND NOTES.

War Relief Funds.—The following New England war relief funds have acknowledged the following contributions:

French Orphanage Fund	$565,649.49
French Wounded Fund, for the American Hospital at Rheims	325,517.76
Italian Fund	322,676.68
Fund for Devastated France ..	189,663.60
"Friends of Poland"	143,494.88

Obituary.

DR. ELMER ERNEST SOUTHARD.

By William N. Bullard, M.D.

Dr. Elmer E. Southard was born in Boston in 1876, was educated in the public schools, and entered Harvard College in 1893, graduating with the degree A.B. in 1897, and A.M. in 1902.

As a boy he seems to have been in no ways unusual except that he took too many medals and prizes at school. In college he was much interested in philosophy and studied under both James and Royce. This interest lasted him throughout life, and as long as Royce lived and taught, Southard attended his seminaries at Cambridge. Once, indeed, when Royce was incapacitated, Southard took some of his work for a time.

His chief outside interest while at college was chess. He became an expert amateur chess player, was chosen to represent Harvard in the matches with Yale, and was a member of the Harvard Chess Club. In later years when he was working hard in the Medical School or Hospital, he told me that his relaxation used to be to go down to New Haven in the evening and play chess all night. He sometimes played chess blindfolded. The very unusual powers thus shown undoubtedly displayed themselves later in his work.

On leaving Harvard College, Dr. Southard entered the Harvard Medical School, taking his M.D. degree in 1901. He was made pathological interne in the Boston City Hospital in 1901 and later assistant in pathology to 1903. In 1901-2 he was for a time at Frankfort and Heidelberg. In 1904 and 1905 he was assistant visiting pathologist at the Boston City Hospital, and at this time (1904-1905) became instructor in neuropathology in the Harvard Medical School. From this time on he continued steadily in the work of neuropathology, his life work, becoming Assistant Professor in 1906 and in 1909 Bullard Professor of Neuropathology, which position he held at the time of his death.

Dr. Southard, in later years especially, was a prolific writer. He read many papers before many medical societies and associations, and he was a member of all the prominent national medical societies in his line and many others. His first paper of which we have record, published in 1901, was "A Case of Glioma of the Frontal Lobe," a purely pathological account of a cerebral condition. He wrote little in the next two years, but in 1904, or 1904-1905 published six papers, all purely pathological. In 1905 and in 1905-1906 we find five papers written either alone or in collaboration with others, all, as before, neuropathological in the narrowest sense (pathological). In 1906, Dr. Southard became pathologist at Danvers State Hospital and he held this position and that of Assistant Physician in the same hospital from 1906 to 1909. We have records of four papers published in 1906 and two in 1907, all of the same pathological nature. The "Outline of Neuropathology" was published in 1906. During these years (1906-1909) Dr. Southard was much occupied at Danvers not only in collating and arranging his thousand autopsies in order to form a basis for his future work, but in attending the early morning clinics at the hospital, and in very interesting investigations with Dr. Gay into certain aspects of anaphylaxis. This work was especially valuable to Dr. Southard, as it was the first opportunity to widen and broaden his field of work. How important this was he early perceived, and he understood that neuropathology, as it should be conceived and as it was defined from the terms of the gift of endowment of the Professorship, was not simply the study of pathological details, however important a part these might play as a foundation or basis for other investigations, but comprised many wide and far-reaching issues, touching and forming links with many allied subjects. Many of these allied subjects became, as they were more nearly approached and more closely examined, so intimately connected with and concerned in the stricter neuropathological investigations that they necessarily became a part and were included in the observations and researches of the more experienced neuropathologists. They became an actual part of the subject of neuropathology in its widest and true aspect.

From this time on the scope of his work grew ever wider and wider. He also studied other collateral lines of work, as when he went to England in the summer of 1907 to work with Sherrington on Physiology.

In 1907-1908 he published, with Dr. Gay, the article on "Serum Anaphylaxis in Guinea Pigs," which assumed much importance at the time, and he also published at this time four (4) other papers, all on pathological subjects.

In 1908, "The Relative Specificity of Anaphylaxis" was published in collaboration with Dr. Gay, and also four articles entitled "Further Studies in Anaphylaxis" with the same author. In addition to these there were seven (7) other papers, clinical or pathological.

In 1908-1909 was published in the *American Journal of Insanity* an article by Dr. Southard and Dr. Mitchell, entitled, "Clinical and Anatomical Analysis of 23 Cases of Insanity Arising in the Sixth and Seventh Decades, with Special Relation to the Incidence of Arterio-Sclerosis and Senile Atrophy and to the Distribution of Cortical Pigments." This was one of the first contributions from the analysis of the Danvers cases which later furnished the basis for so many observations.

It is not worth while to detail the many papers or articles of so prolific a writer farther than to point out work of special interest from some standpoint. In 1909 besides many other papers, Southard published three on bacillary dysentery, following the epidemic thereof at Davers in 1908.

In 1910 came the paper on "Senile Dementia" and his work on "Dementia Praecox" was started.

The year 1912 was again a very active year, with articles on the Psychopathic Hospital, of which he had become director, and on "Normal Looking Brains" from the Danvers material.

In 1914 a most suggestive paper on "Lesions of the Optic Thalamus" was published, and one on "The Topographical Distribution of Certain Lesions and Anomalies in Dementia Praecox."

These last years were more or less fully occupied with his work at the Psychopathic Hospital, where he gave clinics. After the details of management, arrangement, and teaching at the Psychopathic Hospital had been somewhat settled, Dr. Southard was at liberty to give attention to the great problems of neuropathology, and at this time he began to put into application a principle which he had long carefully thought out. This was the application of facts and classifications in one branch of knowledge to another apparently only distantly related. His first attempt at this seems to have been "On the Application of Grammatical Categories to the Analysis of Delusions." The idea that the principles, categories and classifications used in grammar could be applied with advantage in the analysis of mental states was an illuminating one. Dr. Southard studied grammars of various languages carefully and sought to obtain the principles on which the languages were built.

He was also a great student of the dictionary,—of words, of the meanings and derivations of words. This knowledge had a fascination for him and led him not only to use many words not in common or general use in his addresses and writings, but also aided him greatly when, as often happened in later years, he desired to coin new words to express new ideas, new classifications or new connotations.

Dr. Southard was very decided in his view that brain diseases, insanities and dementias, as well as others, should not be considered simply as disorders of the nervous system, but as disorders of the body as a whole. In every insanity the whole body should be examined and considered. It was partly in connection with this very strong feeling that he published in 1914-1915 his article "On the Nature and Importance of Kidney Lesions in Psychopathic Subjects."

He worked vigorously during these years, 1914-1916, and published several articles on conditions in dementia praecox and in manic depressive insanity: also in epilepsy, which he had for many years carefully studied.

In 1916 came his "Stratigraphical Analysis of Finer Cortex Changes in Certain Normal-Looking Brains in Dementia Praecox."

In 1917 he published ten papers.

In 1918, his very important paper on classification of disease for diagnosis, "Diagnosis per Exclusionem in Ordine" appeared; also "The Kingdom of Evil," which has been of great suggestiveness.

From 1916 onwards Dr. Southard's interests broadened and widened and his work extended in many different directions.

While still working at neuropathology in the narrower sense and studying the minute anatomy of the brain in dementia praecox and manic depressive insanity, epilepsy, etc., he was formulating ideas in relation to the conclusions to be drawn from the facts thus obtained. He was also working in many other directions.

I. In collaboration with Dr. Fernald, he undertook the publication of a work on the brains of the feeble-minded, and Part I of this was published in 1918. It may be fairly stated that this is the first scientific work carried out with all the newer and more exact means of research on the brains of the feeble-minded. (Part II of this work is almost finished and shortly to be published.)

II. He conducted investigations into the psychology and mental states of employees in various factories and establishments, showing how the knowledge of specialists in his line could be applied to great advantage in the choice and adaptation of workers, thus entering the subject of industrial hygiene and proving its close connection with the studies of neuropathology.

III. In his work at the Psychopathic Hospital he had instituted a psychiatric social service. In this he was much interested and in several papers he explained what this service was, of what value it was, and how it was differentiated from ordinary social service work and from psychiatric nursing.

In his later years, Dr. Southard felt that the time had arrived when it was advisable for him to place his knowledge before the professors and others in books rather than in more or less fugitive articles. He therefore devoted his attention to writing these, usually in collaboration with some one. Of these books, two have been published: Neurosyphilis, with Dr. H. C. Solomon in 1917, and Shell Shock, in 1919. He, however, had in mind other books at the time of his death, and some of these were far enough along to enable us to hope for their future publication.

Dr. Southard was a neuropathologist, and all his work and interests centred around neuropathology as he understood it. Neuropathology, to his mind, comprised much more than the mere cutting of sections and examining them microscopically or even deducing of great and fundamental facts from them. It embraced all or any research or work which bore on or related to the section of the nervous system to its environment in health or, more especially, in disease. All his other work was subsidiary to this central idea. But his other work in various lines was so excellent, so valuable, and so dominating that he has been variously claimed as a philosopher or psychologist, as a social worker *par excellence*, as an industrial health worker, and as a psychiatrist, and in each of these departments it has been said that he belonged to that department preëminently. In reality, all this work in these lines was secondary or collateral to his great aim: the knowledge of the formation and character of the nervous system in disease and its relations in the internal and reactions to the external world. The unusual amount of work which he accomplished and the energy and enthusiasm which he showed in working on these various problems which were all correlated in his mind is the excuse for the point of view of the separatists. He had written 150 articles. He had at the time of his death seven books in his mind, most of them in some degree of preparation.

I have not entered here into any description of his peculiar abilities. He had remarkable powers of deduction and in addition he had an extraordinary and most unusual capacity to perceive the salient fact and the conclusions to be drawn or which were suggested by any series of facts. A paper written by an assistant which seemed to be stupid, useless, and uninteresting, became under his hand both valuable and illuminating because the important facts were brought out and placed clearly before the reader.

Dr. Southard died in New York City of pneumonia, February 8, 1920. He left a wife, Dr. Mabel Austin Southard, to whom he was married in 1906, and three children, Austin, Ordway, and Anne.

Miscellany.

JULIUS STIMPSON CLARK.

The following resolutions were passed at a meeting of the Middlesex East District held March 17, 1920.

"Resolved that the members of the Middlesex East District desire to place on record their deep sense of loss in the death of their fellow member, Dr. Julius S. Clark of Melrose, recognizing in him those qualities which made him a valued member of the Society.

"Dr. Clark was a man of unusual attainments, a man of convictions and a writer of worth who, by his pen, exerted great influence in matters making for public welfare in the city where he lived. He was a faithful attendant and a ready speaker at our meetings, and sharing in the discussions he wielded always an influence in the deliberations of the Society.

Men of such pronounced individuality as the deceased possessed must always leave their impress which we members of the Middlesex East District hereby recognize."

A. E. Small,
Secretary, Middlesex East District.

REPORT UPON VACCINATION OF THE JOINT COMMITTEE ON LEGISLATION OF THE MASSACHUSETTS MEDICAL SOCIETY, AND THE MASSACHUSETTS HOMEOPATHIC MEDICAL SOCIETY.

Hearings on vaccination were held by the Legislative Committee on Public Health on February 25th and March 17th.

Nothing specially new was brought out at these hearings. In order to meet the assertions of the anti-vaccinationists, that many harmful results followed vaccination, your Joint Committee suggested a provision for prompt investigation and report by the local board of health to the State Department of Health, regarding any alleged harmful results of vaccination. The purpose of the provision is to stop the spread of false reports, and to show in what way bad results are to be avoided if any are found to occur.

The results of vaccination in the Philippine Islands (see editorial article in Boston Medical and Surgical Journal, March 4, 1920, page 246), and the results in Porto Rico were presented. It was pointed out to the Committee that the immunity conferred by vaccination is relative, that it can be compared to the immunity from fire of a building built of non-combustible material. It was also clearly stated that smallpox varies greatly in severity at different times and under different conditions, often beginning in a mild and perhaps at first unrecognized form until it encounters unvaccinated persons in the community.

Your committee asked for the enactment of House 233, making vaccination necessary for admission to private as well as to public schools. Dr. S. B. Woodward presented letters from the authorities of a very large majority of the private schools of the state favoring this plan. The legislation is favored first, that there may be no distinction between the pupils in the private and in the public schools, but second, and chiefly, in order to avoid the danger of any portion of the community growing up to become a source of danger in exactly the same way that combustible wooden buildings are a danger to a city.

Your Joint Committee asks the coöperation of all physicians in the State in making clear to the public and the Legislators the need of protecting everybody in order to prevent smallpox at any time gaining a foothold in an unvaccinated population.

James S. Stone, *Secretary.*

SOCIETY NOTICES.

The Massachusetts Therapeutic Massage Association.—The next meeting will be held at the Hotel Brunswick, Venetian room, at 7.45 p.m., on Thursday, April 15, 1920. Trustees meet at 7.30.

Dr. E. O. Otis will address the Society on "Consumption, its Causes, Cure, and Prevention." Dr. Herman W. Marshall will address the Society on "The Mechanical Arrangements of Lower Regions of Backs —and the Treatment of their Weaknesses."

Members of the medical profession are invited.

Douglas Graham, M.D., *President.*
Agnes J. Kerr, *Secretary.*

National Anaesthesia Research Committee.—The annual convention of the National Anaesthesia Research Committee will be held in Pittsburg the week of October 4, in conjunction with that of the Inter-State Anaesthetists' Association and the Pennsylvania Medical Society. Prizes aggregating $200 are offered by the Society for the best papers on original research in anaesthesia, such papers to be read at the annual meeting. This offer is open to all surgical, medical, and dental students, and practitioners in the United States.

Canadian Medical Association.—The Annual Convention of the Canadian Medical Association is to be held in Vancouver, B. C., June 22 to 25. At the same time the Canadian Public Health Association, the Canadian Association for the Prevention of Tuberculosis, the Canadian Committee on Mental Hygiene, the National Committee for Combating Venereal Diseases, and the British Columbia Hospital Association, will hold their conventions in Vancouver.

The meeting of the Canadian Medical Association is expected to be a particularly good one and many interesting papers have been promised from the profession, not only throughout Canada, but also from the United States, and the interest of this meeting will, of course, be greatly enhanced by the fact that the other associations are holding their conventions at the same time.

The trip to British Columbia may be made a very pleasant holiday, especially in view of the alternate routes that may be used on the return journey.

New England Dermatological Society.—The annual meeting will be held at the Boston City Hospital on Wednesday, April 14, 1920, at 3.30. Members of the medical profession are invited to attend.

E. Lawrence Oliver, *Secretary.*

ADDITIONAL NOTICE OF COMPLIMENTARY LUNCHEON TO GENERAL LEONARD WOOD AT HOTEL SOMERSET.

Owing to the haste with which the notices of the luncheon to General Wood were drawn up, the Committee inadvertantly gave the impression that only one ticket can be secured; if you desire to bring one or more friends with you to this luncheon, you can secure tickets by applying to Dr. Ayer, at 318 Shawmut Avenue, Boston, enclosing check and self-addressed, stamped envelope. Tickets to the luncheon are $4.00. Any physician may subscribe for as many seats as he may desire. Owing to change of location for holding luncheon, there will be only balcony seats for relatives and friends of the Class of 1883 of the Harvard Medical School.

For further particulars inquire of the Class Secretary.

Dr. Silas Hibbard Ayer,
318 Shawmut Avenue, Boston, Mass
Telephone, Back Bay 6723.

Committee: Henry Jackson, M.D., *Pres.*; Silas Hibbard Ayer, M.D., *Sec'y*; Frederick L. Jack, M.D.; William F. Knowles, M.D.

The Boston Medical and Surgical Journal

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GAS BACILLUS INFECTIONS IN CIVIL PRACTICE.*

By Ernest L. Hunt, M.D., F.A.C.S., Worcester, Mass.

Since the description by Welch and Nuttall in 1892 of the *Bacillus aerogenes capsulatus* and its recognition as an occasional cause of rapid and fatal septicemia, usually preceded by local death and decomposition of tissues at the site of its entrance, pathologists have met with it at the autopsy table from time to time and surgeons much less frequently in the operating room or ward. W. W. Keen,[1] veteran of three American wars, quotes Bowlby to the effect that it is practically unknown in Great Britain and adds, "The same is true in the United States. Personally I never saw a single case in the Civil War, and but one in civil life since then." The lesions of this organism, though infrequently seen, had come to be greatly dreaded—in Welch's 46 cases the mortality had been 59%—even before the great war came to let loose its terrible destructive agents under conditions which favored wound infections of the most desperate and unusual character, and of a virulence hardly dreamed of by the present generation of surgeons, educated as most of them were in civil hospitals in an aseptic age. Nor had the experiences of the Russo-Japanese or Boer War prepared the medical mind for what was to occur in Belgium and northern France, where the much tilled soil teemed with bacteria of many kinds, being particularly rich in that group of spore forming anerobes, of which the tetanus and gas bacilli are the most prominent examples. Thus, during the great retreat from Belgium and the subsequent trench warfare, before the medical forces were organized to combat it effectually, gas gangrene was a constant menace and claimed its thousands of victims, at least 70%[1] of the wounds being contaminated with material bearing spores of these germs. Through this enormous experience, however, the clinical manifestations and pathology became thoroughly understood, and the surgical treatment standardized, so that the incidence of gangrene in adequately treated cases dropped from a very high figure to a fraction of 1%.[2]

That gas bacillus infections are more common in traumatic cases occurring in civil practice than pre-war literature had led us to suppose has been impressed upon me both by experience at Worcester City Hospital since my return and by looking up certain cases of which

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* Read before the Worcester District Medical Society, December 10, 1919.

I had knowledge prior to entering military service. Thus, from our experience in medicolegal autopsies on abortion cases, Dr. F. H. Baker and I had come to accept Dr. Welch's suggestion that cases of so-called air embolism were, in reality, cases of gas bacillus septicemia; sudden deaths in convulsions with cyanosis being characteristic, as the following two cases well illustrate.

(1) —— A young married woman living in a rather old and ill-kept tenement house attempted to produce abortion with a piece of glass tubing like a drinking tube. She had a chill that night, but next day, being disappointed with results, repeated the attempt and while in the act developed a convulsion and expired almost immediately. Autopsy and rabbit inoculation established the etiology. Frothy blood throughout the body was the striking feature of the post-mortem findings.

(2) ——— On a very hot day a few summers ago I was called to investigate the death of a young Finnish woman. The relatives denied all knowledge of pregnancy or attempted abortion, but the husband admitted that she received a visit from an unknown woman two days previously. During the previous night complained of weakness, slept poorly and flowed slightly. Restless with increased flowing after midnight. Had pains all the forenoon but refused to have a physician called. About 3.30 P.M., after taking ergot from a physician who was too busy to come, was seized with a convulsion, lapsed into unconsciousness and expired at 4.25. An ordinary douche bag with blood stained tip was found in her trunk. The bed was soiled with putrid smelling blood. Autopsy showed that a miscarriage had occurred and that death was due to gas bacillus septicemia.

Referring to the City Hospital records, I find that in six years prior to July, 1919, there have been four cases of gas gangrene following trauma of the extremities, three of which were treated by multiple incisions and antiseptics, with two deaths and one treated by amputation at the shoulder, with recovery. It should be added that the diagnoses in these cases were based on the clinical findings and not confirmed by cultures.

Since August 1, 1919, there have been three cases of gas gangrene on the services of Drs. F. W. George, G. H. Hill, and the writer. As these are characteristic of the types of injury in which this infection is encountered, a brief résumé of each is worth considering.

Case 1. E. J., male, 11 years old, admitted August 8, 1919. Injury—Jumped from top of fence to catch limb of tree, missed, fell to roadside, driving elbow into dirt, the lower end of humerus being pushed out through the skin anteriorly about 1½ inches. Much roadside dirt was drawn into wound.

Operation about three hours after injury—benzine and iodine preparation. Skin wound enlarged and fringes trimmed away, counter incision made posteriorly above external condyle, dislocation reduced, wound wiped thoroughly with 5% dichloramine-T and partly closed with gauze drainage; dry dressing, and posterior right angle splint. One thousand units of tetanus antitoxin given.

August 9, temperature 100°, pulse 80, complaint of pain in arm; hand warm and of good color. August 10—pain very severe; temperature 103° during night, required morphine. Arm swollen and reddish brown in color, several blisters about wound. On withdrawing wick, a reddish, thin, foul smelling, frothy fluid oozed out and tissue crepitation could be felt extending to mid-humeral region. Discoloration of skin extended to level of deltoid insertion in front and to shoulder in back. Under light ether, axillary vessels were tied and a no-flap shoulder joint amputation done, cutting away devitalized skin well up on posterior surface of shoulder. Under Carrel-Dakin irrigations and careful dressings, which for days required gas-oxygen anesthesia, patient made a good recovery and is well today. Cultures showed a spore bearing rod which fermented dextrose agar in seven hours. X-ray showed focus of gas at elbow extending up arm.

Case 2. W. R. A., male, 20. Admitted November 15, 1919. While riding in a side car of motorcycle collided with a truck, sustaining severe compound fracture of both bones of right leg at middle, and simple fracture of both bones of left leg. Entered in severe shock and considerably depleted of blood by hemorrhage. Refused amputation. Bleeding was controlled by tourniquet. Most of muscles and anterior tibial vessels were severed. Wound cleaned of street dirt, trimmed and thoroughly irrigated with quantities of saline solution followed by iodine, packed lightly, dressed, put in pillow and side splints. Fifteen hundred units tetanus antitoxin. Later put up in posterior wire splint and cast applied to the other leg. Saline intravenous at operation.

November 16—Symptoms of acute anemia were marked and he was transfused, receiving 450 cc. of citrated blood from a Group IV donor, which was followed by a chill and sweating for about one hour; thereafter he seemed much improved. Right foot cold and no pulsation felt. During early afternoon complained of great pain in leg. Wound inspected again at 5.10 P.M.; tissues dry, no odor noted, but there was swelling about the knee. At 10.20 p.m., an odor as of decaying flesh noticed and there was a reddish streak along the course of the internal saphenous vein. Tissue crepitus could be felt extending eight inches above the patella. Smears showed Gram-positive rods with spores. General condition much less favorable. Amputation with coincident transfusion decided upon and attempted under gas oxygen, with death on the table. Highest range of temperature 103²; urine, 1030, many casts and leucocytes.

Case 3. C. H. W., 53, farmer. November 22, 1919, ran gloved hand into corn husking machine at 11.50 a.m., arrived at hospital about 1 p.m. Refused amputation by advice of his employer, although the left hand was extensively crushed and lacerated, the details of injuries being compound dislocation of second and third metacarpal joints, compound comminuted fracture of fourth metacarpal bone and compound fracture of fifth metacarpal at the carpometacarpal joint, deep palmer arch was destroyed and tendons of little finger torn away. The usual accident room cleansing and repair was done and 1500 units of tetanus antitoxin given. All the next day he complained of pain. At 9 a.m. on second day, dressing was removed revealing well developed gangrene with skin nearly black as high as wrist and reddish brown to elbow with tissue crepitus extending four inches above elbow. Amputation at mid-humerus was done and patient is making a good recovery. Cultures in glucose agar gave gas production and the growth showed the usual type of organism, associated with diplococci.

That we were taken somewhat unawares by the fulminant character of the invasion in the first two cases may be conceded—in the third, though thoroughly warned, yet the involvement had reached the mid-humeral region when discovered. It is fair to state also that in cases 2 and 3 it was the judgment of the surgeons that the injuries called for amputations but, as occurs so often, the patients' reluctance to sacrifice a limb jeopardized their lives. That three such cases should occur in the space of four months is a sufficient warning that others may be looked for and compels the attention of those who do traumatic surgery to a detailed understanding of the points upon which an early diagnosis may be based, full knowledge of how to meet it, and courage to act promptly when the need appears.

To begin with, one should always have in mind the fundamental conditions which determine its occurrence and govern its prevention.

Firstly, these anaerobes occur in natural fertilizers, garden soil, street dirt or anything which may be soiled thereby, such as clothing, shoes, tools, carriages, automobiles, horses' hoofs, etc. Consequently, patients with wounds in which contamination by such materials can have taken place must be regarded as potential gangrene cases.

Secondly, as these organisms may be both saccharolytic and proteolytic, the glycogen and protein of muscle offer suitable pabula for their growth, but they cannot develop in normal muscle because of the oxygen which is being constantly supplied by the unimpaired circulation of blood; consequently, an essential to their active development is muscle tissue which from trauma, constriction or other cause has become devitalized. Therefore, severe injuries, like compound fractures, shell or gunshot wounds, which lacerate muscles as well as introduce the germs, are most favorable to the development of the disease. This is particularly true if the major blood supply is seriously impaired either by traumatization of vessels, prolonged application of tourniquet, tight bandages, etc.

Thirdly, being anaerobes, their growth is favored by closure of the wound and symbiosis with the pyogenic germs. As they produce gas a closed wound interferes with its escape, favors its spread along fascia planes and between muscle bundles where by its pressure the tissues are further devitalized.

Fourthly, besides producing gas, their growth hemolyses blood, produces a toxic substance, and a foul, putrid, sanguinous fluid. This toxin is the probable cause of the sudden fatal termination so often seen, although apparently a generalized infection with emphysema occurs shortly before death and is more likely to occur early where large veins are included in the traumatized tissue.

Fifthly, chlorine solutions have been shown to neutralize or destroy this toxin.

Sixthly, if the conditions are favorable to this growth, it takes place rapidly so that such wounds must be observed very frequently until the danger period is past.

Seventhly, being spore bearers, they may remain latent in healed tissue for many months and gangrene may result when a secondary operation is undertaken.

In applying these principles it should always be understood that there are several varieties of gangrene producing germs and the clinical manifestations are not always classical. As Christopher[3] remarks, "The clinician should consider it a disease of multiple etiology in which the chief symptom is not always the same."

It is also to be recognized that wounds known to be infected with these organisms, may not, and often do not develop the disease, nevertheless, cases in which the disease may be developing must be closely and vigilantly studied.

CLINICAL MANIFESTATIONS OF THE DISEASE.

To my mind the earliest and most suggestive symptom is *pain in the affected limb*, which is wholly out of proportion to what would ordinarily be expected in such a wound and develops within a few hours—much earlier than does that of ordinary sepsis. With this is a moderate temperature and a disproportionately high pulse and respiration. In addition to the pain there is local swelling, complaint that the bandages are too tight, and possibly numbness of the extremity below the wound. The skin becomes reddish brown in color and blebs develop near the wound. The skin edges turn dark and the area is exquisitely tender. Here the x-ray may confirm the presence of gas deep in the wound and it is usually detected first in neighborhood of a foreign body if one remains in the tissues. A reddish brown ooze soon occurs, smears of which show many Gram-positive, large rods with oval ends and frequently containing spores. Cultures from this in deep glucose agar develop gas in five to seven hours, with fracture of the agar and separation of the fragments. Tissue crepitus can usually be felt and in general corresponds in distribution to the area of dull reddish discoloration, but swelling and crepitus may extend beyond the discoloration beneath normal looking skin. The patient's mind is usually alert and clear, vomiting is rare. Taylor's explosive stage is reached in from 24 to 36 hours, when the distention of tissues is intense; foul, putrid, foamy discharge oozes from the wound and the condition is very evidently a gangrenous process. The stage of systemic intoxication rapidly merges in to the stage of septicemia, and death ensues.

Pratt[4] attributes great diagnostic value to an early board-like hardness of the limb below the wound which he interprets as a segmental cadavaric rigidity. I have not personally observed this sign.

TREATMENT.

We have to consider treatment under two phases, which are determined by the period at which the case comes under observation and may be preventive or curative accordingly.

Preventive. This obviously begins with the one who renders first aid at the scene of accident and is of course largely beyond control. Should a trained person be present he may render great service by cutting away clothing, protecting the wound by a clean dressing lightly applied and supportive splinting. *He may do grave harm by reducing a protruding bone or applying tourniquet or splints unnecessarily or too tightly.*

At operation the surgeon should determine the bacteriologic condition of the wound by swabbing the interior and having smears stained and examined at once. The presence of Gram-positive rods and their relative numbers should warn him as to his procedure though their absence should not wholly allay his fears. He should cause cultures in deep glucose agar to be made by inoculating with the swab and a bit of the injured muscle. These should be put in the incubator forthwith and inspected for gas within six or seven hours. He then must thoroughly cleanse the wound, lay it open freely, remove all foreign matter, cut away traumatized skin fringes and muscle ends, ascertain condition of blood supply, being very careful to avoid important trunk vessels, preserving such bony fragments as are well attached to periosteum and needed to establish continuity of the repair process. Attention to the muscle ends is of first importance and they should be trimmed down to healthy tissue which can be recognized by the occurrence of bleeding and the normal color. It is necessary to get into all recesses of the wound and clean it up. Carrel-Dakin tubes wound with gauze should then be inserted to the innermost recesses and retained by an occasional fine catgut stitch with care that they shall not unduly press upon the blood supply, pack rest of wound lightly with gauze, apply strips of gauze bandage soaked in sterile vaseline to skin, apply a liberal, soft, absorbent dressing and wire hammock splints if they are available, avoiding undue constriction at any point. Probably it is best to use Dakin's solution by hourly flushing. Inspect limb at least at four-hourly intervals: if any of the symptoms detailed above appear, or the culture shows gas production, do not hesitate to remove dressings at each inspection. At least once daily take smears from inside the wound for bacterial count.

Antitoxin. Numerous antitoxic sera were used by the French as prophylactic and curative agents with encouraging results. Sacquipée[5] advises that treatment begin at once with a polyvalent serum, followed by the serum for the particular strain of bacillus as soon as that is determined by his method of inoculating guinea pigs with material from the wound, against known antitoxins—the pig that gets the right one lives, the rest die. In 191 cases of the disease 86.91 recovered. Preventive value is also claimed for the polyvalent serum.

Antitoxin cannot, however, be said to have gained widespread confidence, nor is it at present available for general use. Prompt and thorough operative treatment is still the only safe reliance and its efficiency is so high that it can be safely neglected for *no other method.*

TREATMENT AFTER DISEASE HAS DEVELOPED.

This is, of course, operative, the type of operation must depend upon the stage the disease has attained when it is recognized, and the choice of operation requires nice judgment on the part of the surgeon. If it be discovered in the early, local stage, the procedure should be free opening of the involved areas with careful anatomical separation of fascia layers down to the bone, avoiding major circulation channels, and excising all the devitalized muscle, which can be recognized by its brick red color, friability and failure to contract when pinched or cut. It may be necessary to excise the entire belly of a muscle or a whole muscle group. Most writers advise long longitudinal, but Hugh Cabot[6] advises transverse incisions. Then carry out the Carrel-Dakin method as advised above.

If not recognized until the explosive stage, when the limb is massively swollen, crepitant and discolored, the wise operator will unhesitatingly amputate by the guillotine method well above the involved areas although at times the extension may be greater on one side than the other and the amputation may be oblique, saving enough skin for a secondary covering in.

With these methods of treatment, even without the aid of preventive serum, gas gangrene is a preventable complication. The difficulty is that in civil practice we are not accustomed to anticipate its occurrence, so are satisfied with less radical primary treatment, protecting against tetanus by means of that valuable antitoxin. In the light of our experience at Worcester City Hospital it seems to me that we must disabuse our minds of complacency in respect to this infection and carry it upon our consciences to make our preliminary treatment of wounds of this character 100% efficient, and our post-operative care sufficiently keen and wide-awake to detect it while it is yet in the local stage, thereby saving our patients from mutilating operation or loss of life.

[Note. In the discussion following the reading of this paper Dr. B. H. Alton reported a case now under his care at Memorial Hospital caused by a gunshot wound of the popliteal space, which he had saved by mid-thigh amputation. He pointed out the importance of acidosis as a factor in the rapidly fatal character of the disease and said that 1000 cc. of 2% sodium bicarbonate solution intravenously was of greater value than transfusion. He also remarked that in his case the infection seemed less virulent than the many he had experienced on the Flanders front.

Dr. P. H. Cook said that roentgenologists distinguish two forms of gas infiltration, one being characterized by extension along fascia planes perhaps in but one sector of a limb, the other characterized by extension also through the muscles in the interfibrillar spaces, giving a massive emphysema involving whole muscle or muscle groups. The former offers more favorable opportunity for conservative surgery while the latter requires extensive operation or amputation.]

REFERENCES.

[1] Keen: Treatment of War Wounds. Philadelphia, 1917.
[2] Sieur and Mercier: Bull. de l'Académie de Méd., 1918. No. 43, p. 394. Abst. Jour. A. M. A.
[3] Christopher, F.: The Early Diagnosis of Gas Gangrene, Jour. A. M. A., Vol. lxxii. No. 6, p. 407.
[4] Prat: Presse Médical, March 24, 1917. Abst. Jour. A. M. A.
[5] Sacquipée and De Levergne: Paris letter, Jour. A. M. A., Jan. 24, 1918.
[6] Hugh Cabot's letter in Keen's "Treatment of War Wounds."

THE "COMMON COLD" IN RELATION TO CERTAIN MICROÖRGANISMS AND ITS TREATMENT WITH BACTERIAL VACCINES.

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The term "common cold" is used in this connection to describe the infection of the various respiratory passages seen so commonly here in the winter.

During the past five years increasing attention has been centered in acute respiratory infections on account of a number of epidemics of increasing severity which have occurred in various parts of this country. Scientific interest has somewhat lapsed in this matter since the demonstration by Pfeiffer in 1890 of the influenza bacillus, and its designation as the cause of that group of symptoms commonly termed "la grippe." Confirmation of Pfeiffer's findings by Kitasato, Pfuhl, and Cannon, together with other observers, led to the belief that this organism was primarily responsible for practically all the severe winter infections of the upper respiratory tract. Prior investigations by Weichselbaum, Ribbot, Bouchard and Saccond, who had found from bacteriological investigations, streptococci and pneumococci as the predominating organisms in this class of disease, were discarded, and it has only been through a re-investigation of this subject that the true place of the influenza bacillus in respiratory infections has been proved. Since 1894, there have been an increasing number of observations, among which may be cited those of Kleinbeger, Krause, Lord and Bezançon, who have investigated the connection of the influenza bacillus with acute respiratory disease, and while at times finding the organism of Pfeiffer, have with much greater regularity, found streptococci and pneumococci, together with other organisms, in abundance.

Investigations of the "common cold", by anaerobic methods and the search for a filterable virus as an etiological cause, have given rise to some interesting observations. In cases of rhinitis, Tunnicliff has described a small microorganism, which she found fairly regularly in the early stages of acute coryza. Experimental work with dogs has shown that fairly typical attacks might be produced with this microorganism.

The work of Krause, more recently supplemented by that of Foster, on the question of a filterable virus in cases of rhinitis has shown that by means of filterable products in acute nasal infection, substances were obtained which, experimentally in human beings, would reproduce the infection when inoculated into the nose.

A widespread epidemic of acute respiratory infections, occurring generally in this country during the winter of 1915-1916, was carefully investigated by Mathers in Chicago. As a result of the use of aerobic, anaerobic and filtration methods in a study of some sixty-one cases the organisms found greatly to predominate were the hemolytic streptococcus, the streptococcus viridans and the pneumococcus. The presence of the bacillus of influenza occurred only in one case.

The work of Dochez, Gillespie, Avery, Stillman and others on the pneumococcus have brought out many facts in regard to the presence of this organism in the upper respiratory passages. Stillman, in a study of 390 normal individuals, found that in the saliva fully one-third carried a pneumococcus, the more avirulent types predominating. Dochez and Avery in a study of contacts in cases of pneumonia found that a very considerable percentage became carriers of virulent types of the pneumococcus.

These and other investigations point to the importance of those organisms included in the groups of streptococci and pneumococci as playing a predominant rôle in acute respiratory diseases rather than certain other microörganisms, such as the bacillus of influenza.

The present work, which runs back several years, has concerned itself almost entirely with a study of the streptococcus and pneumococcus groups of organisms as they have appeared in various phases of the "common cold". This work was begun during the winter of 1913-14 and continued during the winters of 1915-16-17-18. An effort has been made to determine the type of "common cold" in relation to the presence of one of the members of the pneumococcus or streptococcus groups, and to see what could be done to control these various infections by the use of bacterial vaccines. The types of streptococci encountered have been determined through their action on blood agar, fermentation of a variety of sugars, and their virulence, in some instances, toward animals. For the last three years, where the pneumococcus has been encountered, a study of types has been carried on in connection with therapeutic measures.

METHODS.

On account of the large bacterial flora commonly found in the naso-pharynx every effort has been made in this study to secure culture material as early as possible after the onset of the disease. Those cases included in this series are, therefore, only those in which such material was secured within thirty-six hours of onset, and this in part accounts for the irregular distribution of the type of cases studied. In those cases where the time elapsed from the onset of the infection was a matter of a few hours, cultures were secured through means of protected swabs from the turbinate region in cases of coryza, from the soft palate in cases of a burning red throat and from washed bits of tracheal or laryngeal secretion where the onset of the disease pointed to an infection in this location.

Aerobic and anaerobic cultures were planted in plain broth, aicitic broth, litmus milk, blood agar, dextrose agar and dextrose aicitic agar. At the end of eighteen to twenty-four hours isolated colonies were transferred and pure cultures of pneumococci or streptococci were tested for animal virulence, then action on blood agar and fermentation of sugars. In many instances, a number of strains of these organisms were studied in each individual case. Where a local epidemic was in progress in an institution as many cultures as possible were studied by these methods to determine if there was a common organism present as an etiological factor.

During the winter 1913-14 in a series of seventy selected cases where there was an invasion of the upper respiratory passages, sixteen showed an initial infection in the tonsillar region, forty on the uvula and soft palate, four on the mucous membrane of the nose, and ten in the larynx and trachea.

During the fall and winter of 1914-15 a series of thirty-five cases was investigated, a few being taken each month, beginning with the month of October, in order to note any change in the type of organisms in these infections during the winter months. A summary of this investigation shows the predominating organism to be hemolytic streptococcus in twenty-three observations, the streptococcus viridans in five, a non-hemolytic streptococcus in sixty-one and the pneumococcus in twenty.

During the winters of 1915-16-17-18, similar work has been carried on chiefly among cases of acute laryngitis and tracheo-bronchitis. The pneumococcus has been most commonly found, Type IV predominating; although Types I and II have not been infrequent. The same organism was obtained in some twenty-five cases of laryngitis and bronchitis occurring in the late spring of the year. The pneumococcus thus recovered was almost entirely of the Group IV variety, and, following Olmstead's serological classification, most of them fell in the first twelve subgroups.

As a result of observations carried on during the past five years, it has seemed possible to divide the common cold roughly into the following clinical types:

a. Acute rhinitis.
b. Acute pharyngitis. Followed by rhinitis and laryngitis.
c. Acute laryngitis. Followed by tracheitis, bronchitis, and pneumonia.
d. Acute tracheitis. Followed by bronchitis and laryngitis.

Acute rhinitis is characterized by sudden swelling of the nasal mucous membrane, with a watery discharge, fullness in the head and general malaise. The organism commonly found in the secretion belongs to the staphylococcus group, and somewhat less frequently the hemolytic streptococcus has appeared.

Acute pharyngitis is characterized by redness and swelling of the fauces and of the posterior wall of the pharynx, pain on swallowing, dry cough and temperature. The infection may extend into the nose or larynx. Almost invariably, the initial infection is produced by the member of the streptococcus group. The types of cold beginning with laryngitis or trachitis and followed by a rapid extension over the respiratory tract are closely related and generally due to one and the same microörganism. Aside from the local symptoms, the type is accompanied with considerable muscular pain, and the name of grippe is commonly applied to it The pneumococcus of the Group IV, or occasionally of the Groups I and II, is predominant. Occasionally, however, the hemolytic streptococcus has been the original invader. The early fall and winter colds are generally of the first types. The early and late spring colds are of the last two types.

The type of cold originating as laryngotracheitis has frequently appeared in epidemic form in many large cities, and, on account of the severity of its manifestations, some observers have considered it to be due to the bacillus of influenza.

In securing cultures during the first hours of an infection it is generally possible to determine the predominating factor before various other microörganisms, commonly present in the nasal and buccal mucous membrane, have had time to multiply.

The work of Dochez and Avery on the question of the epidemiology of the pneumococcus demonstrates how readily even the virulent strains of the organism are transmitted from person to person and, as Valentine has pointed out, the large numbers of this organism in the secretions of many respiratory infections makes its etiological relationship very suggestive.

It would seem futile on account of the multiplicity of the organisms commonly present and constantly changing on the mucous membranes of the nose and throat to expect that all acute respiratory infections might be due to one microörganism. The filterable virus obtained by Krause and Foster may in some instances be productive of a typical choryza. The anaerobic bacillus of Tunnicliff similarly may be a factor in the production of acute respiratory disease. In other instances, however, these and many other bacterial observations go to show that in the group of streptococci and pneumococci we have at least two of the predominating etiological factors in our winter colds whether primary or secondary.

USE OF BACTERIAL VACCINES.

In view of the fact that so many observers have reported a great predominance of the streptococcus and pneumococcus in various manifestations of the "common cold," and, further, as many of the complications which arise secondary to it have as the predominant organism one or more members of these groups, it seemed worth while to see if something could be done by the simple method of the use of bacterial vaccines to control this type of infection.

In view of the prevailing feeling among bacteriologists that immunity to the streptococcus and pneumococcus is of a very temporary nature, the effort to devise a means of mitigating the effects of the severer colds necessitated the working out of a method of producing some degree of resistance to these groups of organisms which appear so commonly. During the past three winters, 1916-17, 1917-18, 1918-19, a series of observations have been carried out on the use of bacterial vaccines in the treatment and control of acute colds. The type of cases largely dealt with has been that of a person peculiarly susceptible to acute respiratory infection, and, who, on account of this and the incapacity so produced, is willing to adopt any measures that promise relief. The majority of persons in normal health suffer during the course of a year one or more colds, generally in the form of coryza, or as a laryngobronchitis during the late spring months. There is, however, an increasing number of persons in the community where this average is many times exceeded; so much so that in the worst cases a renewed infection may occur every ten days over a period of six or eight months.

While the majority of people will, as a result of an intracutaneous test for sensitization, show a relative susceptibility to one or more of the common microörganisms associated with colds, such cases as those cited will give evidence of marked hypersusceptibility sometimes to one organism, frequently to more than one. This can be shown not only as the result of the intracutaneous test, but has been more fully demonstrated following the subcutaneous inoculation with bacterial vaccines. At times not only marked local reaction occurs, even with a dose well below the average, but constitutional symptoms are also pronounced. This hypersusceptibility apparently explains the cause of many repeated colds, especially from these microörganisms which confer little resistance. It has been noticeable, however, that at times following an acute cold the resistive powers of the individual to the specific microörganism are at least temporarily greatly increased, as shown by their decreased susceptibility, than before such an infection

The method devised has been as follows:

The isolation of members of the staphylococcus, streptococcus and pneumococcus from cases where the infection has been severe, and the preparation of bacterial vaccines from each one of these types of organisms. Therapeutically, early in the fall, three or four inoculations are given of a combination of the vaccines of the streptococcus and staphylococcus groups. In the early part of the winter, a second series of inoculations is given with a combination of the vaccines of the members of the streptococcus and pneumococcus groups, and this is repeated in the early spring. Should a cold develop in the interim, the patient is urged to present himself for inoculation during the first twelve hours of the onset of the infection. One or two inoculations will occasionally bring the cold to a rapid termination. In those cases where abortive colds appear, or where, in spite of inoculations, an extensive infection develops, microörganisms are studied in each instance, and autogenous preparations made and used in subsequent inoculations.

The results of this method have been in some instances unsuccessful, but in the majority the inoculations have materially modified the severity of the types of colds usually endured, and have diminished their frequency. In some individuals practical immunity from acute respiratory infections has been secured. This has been especially the case in those individuals, who have an abnormal susceptibility to this type of infection, and in whom it is not uncommon to see one cold rapidly succeeding another.

The initial work in prophylaxis against pneumonia was inaugurated by Lister in South Africa among the workers in the diamond mines. The result of his observations shows the possibility of the protection of a considerable part of the community by bacterial inoculation through lessening the number of carriers, and, perhaps, the virulence of the strains found in the community.

The recent publication of the work of Cecil and Austin on the results of prophylactic inoculation against the pneumococcus points to the possibility that something can be accomplished in curtailing infections produced by this organism through the injection of large amounts of a combination of types of this microorganism.

Eaton secured favorable results by the use of vaccines in infections of the nose and sinuses where, primarily, the disease was due to the streptococcus, pneumococcus and the bacillus of influenza. It would, therefore, seem, as the result of these observations and those of other observers, that active immunity, even though of temporary duration, may be produced through the use of bacterial vaccines for the members of the streptococcus and pneumococcus groups. Careful study of the microörganisms most commonly concerned, in the individual case, in the production of acute respiratory infections, with the use of frequent inoculations in large quantity of the various types of the microörganisms concerned, promises results not only in the suppression of the common cold, but, also, to go a long way as a prophylactic measure in the relief of its various complications.

CONCLUSIONS.

1. The results of many recent observations point to the predominant place of members of the streptococcus and pneumococcus groups in the etiology of infections of the upper respiratory tract.
2. General classification of the various types of the "common cold" is suggested, and these rest on a fairly constant bacteriological basis.
3. The production of an active immunity through the use of appropriate bacterial vaccines promises to be of value prophylactically in the control of infections of the upper respiratory tract.

BIBLIOGRAPHY.

Wien. klin. Wchnschr., 3, p. 104, 1890.
Ztschr. f. klin. Med., 17, p. 545, 180.
Sem. Méd., 10, p. 35, 1890.
Sem. Méd., 10, p. 51, 1890.
Sem. Méd., 10, p. 93, 1890.
Deutsch. med. Wchnschr., 18, p. 28, 1890.
Deutsch. med. Wchnschr., 18, p. 28, 1892.
Centrabl. f. Bakteriol., II, p. 397, 1892.
Deutsch. med. Wchnschr., 20, p. 513, 1890.
Deutsch. med. Wchnschr., 36, p. 575, 1895.
Bull. de l'Inst. Pasteur, 3, p. 372, 1895.
Publ. Mass. Gen. Hosp., 2, p. 715, 1909.
Jour. Am. Med. Assn., 61, p. 727, 1913.
Jour. Infect. Dis., xxi, p. 1.
Jour. Infect. Dis., xiii, p. 283.
Jour. Med. Research, xxxi, p. 455.
Jour. Exp. Med., xvi, 2, p. 114.
New York Med. Jour., 105, p. 293, 1917.
Jour. Ophth., Otol., Laryngol., 23, p. 330, 1917.
Jour. Exp. Med., 26, p. 97, 1917.
Jour. Exp. Med., 26, p. 513, 1917.
Bull. Johns Hopkins Hospital, 28, p. 306, 1917.
Jour. Exp. Med., 26, p. 537, 1917.
Pub. South Af. Inst. Med. Research, 10, 1917.
Jour. Exp. Med., xxviii, 1, p. 19.
Jour. Am. Med. Assn., lxxi, 8, p. 635.

X-RAY DIAGNOSIS AND THERAPY.*

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More and more in my work I realize the limitations as yet bounding all our human endeavors, especially in the field of medical science. The more x-ray work I do the more I realize how much I do not know about medicine and especially about x-ray interpretation. We radiologists do a great many times make brilliant diagnoses; we discover entirely unexpected and interesting lesions; we get gratifying results with our x-ray treatments; we find almost daily something interesting and unusual, something puzzling, and a great many times we battle against discouragements none but radiologists can know. We contend with the perversity of inanimate objects, chemicals, machines, and other things. Unless conditions are as near ideal as possible we cannot, of course, obtain the best results and how often, indeed, are our working conditions ideal? Most of us work with inadequate equipment, inadequate supplies, imperfect machinery, and worst of all, we have insufficient time and assistance with which to study our patients. Most discouraging of all, a doctor can make a mistake in diagnosis but for a roentgenologist to misinterpret a plate is the height of stupidity. The consulting physician will rarely forgive such stupidity nor favor the radiologist with any more cases. I said failure properly to interpret a plate, for I believe a good x-ray plate is a true representation of actual conditions and our mistakes in diagnosis are due often to our inability to perceive slight changes in outline or penetration. Many times I have been overwhelmed with the lack of sympathy which the average doctor displays toward the mistakes made by radiologists. Doctors cannot apparently realize the many sources of error possible, and at times inevitable, which confront us in our work. The size of the patient, the lack of coöperation on the part of the patient, the difficulty of proper focussing, of getting sufficient penetration, neither too much nor too little, but a happy medium which differs for the size, age and muscular development of the individual; the quality of the plates and chemicals, the temperature of the solutions used, the instability of the electric current, and any number of other complications may render imperfect results. Were our mechanical and physical limitations not so great I firmly believe that we could be credited with a larger percentage of correct diagnoses than we are now.

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* Read before a meeting of the New England Woman's Medical Society, on December 18, 1919.

I took up x-ray work because it represented to me one branch of medicine to which I thought I could pin perfect faith. I have had to battle many times to keep this unbiased faith, especially, when I have made mistakes in diagnosis. I used to be immensely interested in my correct diagnoses; for, as everyone knows, every radiologist scores a high percentage of absolutely correct diagnoses. The finding and localization of foreign bodies, fractures, dislocations, typical ulcers and cancers become comparatively simple and easy. We can, for example, locate a high percentage of gall stones, pathological gall bladders, and renal stones. We are always, however, confronted with the possibility of error due to the size of the patient and to the fact that on an x-ray plate we cannot obtain perspective. We may very easily confuse renal stones, gall stones, and calcified mesenteric lymph nodes, or even fecoliths, so that in most cases it is advisable to have as complete medical and laboratory examinations as possible in addition to the x-ray examination. I will say that I am convinced that when, in cases diagnosed by us as renal stone, the surgeon merely needles the affected kidney and finding no stone in this way, disputes our diagnosis, the x-ray diagnosis may still be reasonably judged accurate until definitely proven otherwise at autopsy or at a subsequent operation, because undoubtedly it may be perfectly possible to miss finding a stone merely by probing with a needle.

Did we have facilities at hand more often for injecting bismuth paste into sinuses, collargol, thorium, or sterile sodium bromide into kidneys and ureters and other more or less difficult procedures, undoubtedly we should score higher records for correct diagnoses. Injection of air into the ventricles of the brain or into the peritoneal cavity gives brilliant results, but I can hardly see how with our routine x-ray work such procedures are either advisable or necessary.

Chest cases are particularly interesting and satisfactory. We can definitely and accurately define the size of the heart, the presence or absence of aneurysm or aortitis, and the limit of diaphragmatic excursions. We can definitely determine the presence of tuberculosis in a large number of cases in which the physical signs may be either indefinite or absent. A persistent or enlarged thymus, pleural thickening, fluid or air in the chest cavity, cavities, or lung abscesses, hilus or peribronchial thickening, areas of consolidation, can all be definitely located on an x-ray plate. We do confuse the mottling of the lungs remaining after influenza with tuberculosis; but providing six months have elapsed since the influenza, this source of error can be discounted. After an x-ray diagnosis of fluid or pus in the chest cavity, the report frequently comes back to us that no fluid or pus could be located by pleurocentesis; but pus or fluid may be encapsulated and therefore not easily found with a needle and the diagnosis may still be open to question.

Obscure bone lesions are interesting. We can definitely show sarcomata cysts, fractures, deformities, periosteal thickening, decalcification, all sorts of unusual conditions and diseases which might otherwise escape detection until too late. With the proper technique and by always taking both sides (for example, both the right and left arm, foot, leg, ankle, etc.), minute differences in bony structure can often be made out. Many radiologists claim it is impossible to detect osteomyelitis before the second or third day after the onset of the symptoms or even later than that. This is often the case, but I have seen many cases where from the first day a scarcely noticeable difference in the texture of the affected bone could be demonstrated on the x-ray plate. I can only describe it as an obliteration, a clouding over of the delicate pencilling of the bony structure as compared with the corresponding bone of the opposite side.

As for joints, I always compare the affected joint with its fellow on the opposite side. Only thus am I able to make even an attempt at diagnosis. A cloudiness, a slight feathery fibrillation, roughness or flattening of the articular surface can only thus be detected. Of course the technique in taking the x-ray must be identical for each joint or it would be worse than useless to compare the two sides; and needless to say, the dark room technique in developing the plates must be accurate.

I am convinced the x-ray can discover *Bacillus aerogenes capsulatus* infection long before it is suspected by the clinician. Frequently, of course, we get unusual bone lesions; Paget's disease, scurvy, syphilitic anomalies, metastatic carcinomata, etc., that puzzle us sorely and form many a point of contention between us and the clinician and cause endless worry, trouble and dispute.

But it is the gastro-intestinal cases that puzzle and worry me most, and I know that other radiologists have the same difficulties and worries over their cases. As I said before, it used to be the accurate diagnoses I made that interested me most; now I am particularly interested in my mistakes. I have been basing most of my conclusions and diagnoses on my x-ray findings alone and several times I have been very much mistaken and disappointed. True, this disappointment has been offset many times by finding by x-ray some hitherto entirely unexpected gastric lesions, when from the x-ray findings alone an operation has been judged imperative.

These are the cases that puzzle me; very stout patients who are difficult to fluoroscope, difficult to get good plates on, and who apparently have classical gastric symptoms. Hysterical and neurotic patients with indefin gastric symptoms come next. These often show by x-ray apparent filling defects or anomalies in gastric outline relieved by the administration of atropine to the physiological limit. I have often wondered whether many of these patients might not after all be suffering from small submucous ulcers of the gastric mucosa which heal and reappear at intervals much as do the cankers of the mouth from which many individuals suffer. Frequently such cases are operated on, since the x-ray apparently justifies the diagnosis of ulcer, and no ulcer is found. When no ulcer is found on inspection of the outer wall of the stomach, of course the radiologist is criticized. True, many filling defects (irregularities in outline) of the stomach may be caused by a reflex gastro-spasm due to a diseased appendix, gall bladder or other intra-abdominal condition; but in the absence of any such obvious cause, why blame the gastro-spasm to hysteria? Why not to small, easily healed ulcerations?

Quite frequently ulcers which escape detection by the x-rays are found at operation. These are generally situated on the anterior or posterior wall of the stomach. They are unaccompanied by any gross demonstrable filling defect or incisura. They very frequently cause a marked rapidity of emptying of the stomach, very rarely a stasis. Stasis I have found occurs rarely except in marked ptosis or when due to some obstruction at the pylorus or duodenum. I have several times carefully examined, by plates and fluoroscope, patients in whom I could find no evidence of the stomach and yet a subsequent operation revealed an ulcer of the stomach. It may be that when we can take a number of plates in rapid succession we may be able to discover otherwise unnoticeable defects in gastric outline. But our percentage of gross mistakes is by no means overwhelming for we can detect the great majority of gastric lesions and we can detect readily adhesions, and definite obstructions of the gastro-intestinal tract by means of the barium meal or enema.

As for x-ray treatment, I wish I might have more time to give you a better idea of the scope of the treatment work and its limitations. We do get results and can prove it. We have to our credit innumerable cases of epitheliomata we have eradicated; we stop uterine hemorrhage quickly, especially in metrorrhagia due to fibroids and reduce markedly the size of these tumors; we can use the rays in the treatment of psoriasis, acne, birthmarks, moles, lupus, ring worms, warts, keloids and a number of other skin lesions with benefit. We reduce the size of the thyroid and reduce the toxemia in Graves' disease. We can reduce the size of a persistent or enlarged thymus. In post-operative cases of cancer of the breast a great many doctors are already using post-operative radiation. In inoperable cases of cancer of the breast and uterus and other organs we can and do decrease the pain, the odor and the discharge, if nothing else. As a rule, we get our treatment cases only after every other remedy has been tried.

One feature especially handicaps us in our work and that is the expense connected with our work. Plates, chemicals, and especially equipment are so expensive that the moderate fees charged at many hospitals do not begin to cover the expenses in the x-ray department. Therefore in institutions which are not endowed we cannot produce the results that are possible in institutions or private offices where lack of money is no obstacle.

There is one point I wish especially to emphasize. It is undoubtedly true that a radiologist who has made a special study of x-ray work and especially of x-ray interpretation, whose eye is trained to analyze chemical fog, imperfect dark room technique, etc., can make an accurate diagnosis from a poor, thin plate, when, to a casual observer, the shadows on the plate mean next to nothing. I know of no x-ray laboratory, not even the best in the country, that can produce absolutely crystal clear x-ray plates all the time, but practically all radiologists can produce plates from which we can make accurate diagnoses most of the time. Good plates, too, can be judged to be poor if viewed with poor illumination. Also it cannot be expected that we can get excellent detail through plaster casts, adhesive strapping, metal splints, etc. I have had several physicians who have sent me patients with limbs still in plaster casts which could not be removed, and apparently they could not understand why I was unable to state definitely whether or not there was any beginning callous formation.

Naturally the best results can be obtained only by using the best equipment, especially the best tubes; and when, as is often the case, the same tube must be used for treatment and all x-ray work, the focal spot on this one x-ray tube becomes blunted and we cannot get beautiful detail. And with a Coolidge tube we cannot ordinarily get the beautiful detail that a gas or hydrogen tube will give, but in a busy hospital laboratory we have not time to be constantly fussing with gas or hydrogen tubes. Most of us do the best work we can with the equipment we have and with the conditions we have to contend with.

THE SURGICAL TREATMENT OF CHRONIC EMPYEMA.

By Wyman Whittemore, M.D., F.A.C.S., Boston.

There seems to be no definite time when an empyema that was once acute should be placed in the chronic class. It may be questionable if it is fair to label as chronic a case which was acute at the beginning, but which leaves the hospital at the end of six or seven weeks with a discharging sinus. I consider that any acute case which is not healed up in six or seven weeks has become chronic. Furthermore, for the purpose of discussion, I shall divide chronic cases into two groups—the early chronic and the late chronic cases Before taking up these two groups, I wish to state that with an occasional rare exception I believe that all acute empyemata, if correctly operated on and correctly treated after operation, should be healed up within six or seven weeks. In other words, if an acute empyema drains for several months there is probably one of three reasons for it; either it is a neglected case and has not received surgical attention when it should have, or it has been operated on badly, or the after care has been poorly managed. One occasionally has to deal with an individual whose mentality is such that he hinders rather than helps the surgeon in his after care. I well remember a foreigner who persisted in taking his drainage tube out at least once every twenty-four hours; this case became chronic. In this arbitrary division of early chronic cases, it is a question just when one is justified in doing a radical operation in an early chronic case. But I believe on general principles that a radical operation done early will produce better, certainly quicker, results, than if delayed for a year or more. If at the end of six or seven weeks we find the count of organisms in the smear taken from the pleural cavity staying, and persistently staying, up to five, six or seven organisms per field under the high power of the microscope, then I believe it is justifiable and the only correct surgical procedure to do something more radical. At the Massachusetts General Hospital we have had an occasional such case, especially in those cases operated on by means of the closed air-tight suction technique, and we have always taken out a rib.

Two facts in regard to the taking out of a rib are of interest. First: The correct rib to take out is the one just above the drainage, as the diaphragm has always been found to be contracted up to the level of the drainage, so that although the drainage is between the eighth and ninth ribs, if one should take out the ninth or tenth rib one would immediately get into difficulties with the diaphragm. Second: We have always found a very small cavity, one perhaps as large as a hen's egg, or even smaller; never, I believe, larger. This cavity if opened up wide and packed with gauze, has rapidly healed up. In other cases we have found that the cavity at the end of two or three months shows no tendency to become smaller, in spite of good drainage and the thorough use of Dakin's solution. In these cases I believe in doing a more radical operation at once, rather than waiting six months or a year. This radical operation is exactly the same as that done in the late chronic cases and will be taken up in its own place.

In the late chronic cases, one can have a persistent discharging sinus from a large cavity and also from a small cavity. A chronic case on entering the hospital has a culture and x-ray taken and then a small tube or catheter is put through the sinus as far up into the cavity as possible and irrigations with Dakin's solution started and kept up until the cavity is as sterile as possible. The common cultures are staphylococci plus either pneumococci or streptococci, or all three. We can usually get rid of the pneumococci and often the streptococci, but seldom all of the staphylococci. The small cavities can be cured, after they are located, by opening them up wide and packing them with gauze or by the Carrel-Dakin method. The large cavities are difficult to cure. I agree with the observation made by Dr. John Homans of the Peter Bent Brigham Hospital, that if the lower lobe of the lung is adherent to the diaphragm the prognosis is better than if it is not. In the cases in which the lung is shriveled up to a small mass about the root of the lung, especially if the lung contains a large amount of fibrous tissue, I believe there is no operation that will do much towards making the lung expand again. Whether or not in the large cavities, with or without the lung being adherent to the diaphragm, good drainage and persistent use of the Dakin's solution will entirely cure the cases is a question. It has been stated by excellent authority, the Empyema Commission, that it will. They claim Dakin's solution will gradually dissolve the thick pyogenic membrane off the costal and visceral pleurae and the lung will then entirely expand. I do not question this observation but can merely state that in a series of cases of my own in which I have tried this method I have never had a successful case. In the large cavities, after one has gotten them as sterile as possible, especially if one can get rid of the streptococci, then I believe a decortication is the only surgical procedure to be considered. But one should carefully pick the case and carefully prepare it for operation. Patients thirty years of age or under will do better than those forty or over. A decortication may be done either by means of a long incision between the ribs, which are then retracted far apart, or those ribs overlying the cavity may be resected. I personally prefer this latter way as it permits one to get rid of the costal pleura more easily and as all cases are not brilliant successes and the lung does not always fully expand. the chest wall will help obliterate the cavity in those cases in which the lung does not fully expand. After the decortication the lung should be blown up. In the most favorable cases the lung will fully expand, in the others it will expand part way to the chest wall. With the lung blown up the wound should be closed air tight. A small catheter or rubber tube that is shut off should be sewed in tightly at the bottom. Twenty-four hours after operation the bloody serum that has collected in the pleural cavity should be sucked out. The after care should be such that no air is allowed to enter the pleural cavity. Irrigations with Dakin's solution are started forty-eight hours after operation and kept up until there are no organisms at all. This takes in the average case six or seven weeks.

Fifteen years ago a decortication was considered a very dangerous operation and I remember Dr. Maurice H. Richardson saying that he would not do it unless the patient no longer cared about living. Today if one selects the proper case and carefully prepares it for operation, I do not believe it is a very dangerous operation.

In a small series of fifteen decortications I have had no mortality. Eleven cases healed up and remained so, two are still discharging a very small amount of pus after ten months and eleven months, respectively, but both are in good physical condition and do not wish any further surgery. Two cases have not been traced. In a series of nineteen cases having small cavities in which the costal pleura was excised and the cavities either packed with gauze or treated with the Carrel-Dakin method, fifteen healed promptly and have remained so, one is still draining, and three have not been heard from. There was no mortality.

In this series of thirty-four cases of chronic empyema, twenty-six have become entirely well, three cases are not healed and the remaining five have not been traced. There has been no mortality.

In looking over these statistics I feel that these unfortunate cases should no longer be considered as once they were, practically hopeless, but that the hope of ultimate recovery which can now be held out to them is very much greater than ever before.

Clinical Department.

AN UNUSUAL CASE OF MYELITIS.

By Arthur L. Kinne, M.D., Holyoke, Mass.

The following history is so unusual as to warrant putting it on record.

Patient, Mr. E. C., a bank clerk, a large, athletic man, thirty-seven years old, and a widower, was first seen in my office October 13, 1919. At that time he complained of having a "cold," with a slight cough and a sore throat. The temperature was 99, physical examination negative save for a reddened and injected pharynx. The condition appearing to be a tracheitis and pharyngitis, the patient was given a mild expectorant mixture and told to remain indoors. Two days later I was called to the patient's home, at which time he presented the picture of a mild influenzal infection with a temperature of 100.6, headache, general malaise, and a hard, dry cough. Examination at this time showed nothing except a very red throat and a few crackles at the bases of both lungs.

Early the next morning I was called and told that the patient could not void. When seen he was very uncomfortable from retention and the bladder extended half way to the umbilicus. He was catheterized immediately and then stated that he had noticed his legs beginning to feel numb and that he could not move them. Upon examination he was unable to move either leg and had lost all sensation below a line across the abdomen just below the level of the umbilicus. The knee jerks were present but very much diminished, there was no Babinski or ankle clonus. Questioning as to his previous history revealed nothing of importance and he denied venereal disease.

On October 18th, he was examined thoroughly in company with Dr. G. D. Henderson. At this time there was a spastic paralysis of the lower extremities, the knee jerks were very much exaggerated, equally so on both sides; there was a marked Babinski on both sides and a slight ankle clonus. The cremasteric reflexes were lost, the abdominal reflexes were present. There was an absolute motor paralysis of both legs and complete anesthesia below a line across the abdomen below the umbilicus. There was a complete retention of urine and considerable bowel distention, a little gas being passed at times. Wassermann at this time was negative, and x-ray of spine was negative. Temperature, 98.6; pulse, 80. W. B. C. 15,800 with 85% polymorph. neutrophiles. A spinal puncture was not done. The findings seemed to warrant a diagnosis of a transverse myelitis of infectious origin, originating from a respiratory infection.

The patient's condition remained unchanged until October 27, a catheter being fastened in the bladder most of the time. On this date the patient noticed that he could move both legs a little and that there was some feeling in them. On October 30, patient developed a temperature of 102, probably from urinary infection, and on October 31 he voided for the first time since the onset of the paralysis. From this time on he improved rapidly, sensation returned and the motor power became stronger daily. On November 10 he was allowed out of bed and a few days later insisted on being allowed to walk a few steps. At this time the Babinski had disappeared, but the knee jerks were very active. Improvement continued steadily and on December 20 the patient was back at work feeling a little weak but able to walk perfectly well and with all reflexes normal except perhaps a slight increase in the knee jerks.

The treatment of this patient was purely symptomatic throughout the illness. Hexamethylenamine and sodium benzoate were given at the beginning, calomel and salines were used to procure elimination, bromides and barbital for restlessness. The patient was turned in bed every two or three hours and was given frequent alcohol rubs. Constant drainage was kept in the bladder, the catheter being removed at intervals, and the bladder was irrigated once daily with a boric solution. Enemata were used when needed.

SUMMARY.

A vigorous man, 37 years old, was taken with a mild respiratory infection, apparently not serious, and developed a few days afterward an absolute paralysis of the lower extremities, the bladder and the bowel. The condition was stationary for a little over two weeks, when patient began to recover both motion and sensation and from this time on recovery was extremely rapid, so that inside of two months he was back at his usual work.

Book Reviews.

The Operative Treatment of Chronic Intestinal Stasis. By Sir W. Arbuthnot Lane, Bart., C.B. Consulting Surgeon to Guy's Hospital, and to the Hospital for Sick Children, Great Ormond Street. Fourth Edition, revised and enlarged. London: Henry Frowde, Oxford University Press; Hodder & Stoughton, Warwick Square, E.C. 1918.

No one should read this book without first reading slowly and carefully the preface, written specially by Mr. Lane for this new edition. This preface contains only five pages, but it gives a valuable and accurate indication of the character of the three hundred which follow.

About half the book is from the pen of Mr. Lane; the remainder is written in a dozen chapters by other well-known British medical men: among them, Mr. Keith, the anatomist, and Sir James MacKenzie.

After finishing the preface, and before beginning a systematic examination, the prospective student should also read carefully the paragraph on page eighty-six, which we quote literally.

"I will begin with rheumatoid arthritis.

"What can be more startling than the effect of colectomy upon a case of acute rheumatoid arthritis? One sees a patient who has lain on her back in agony for many months, or even years, dreading any movement in her swollen and painful joints. Within twenty-four hours after the colon has been removed the patient is able to move every joint in which bony anklosis had not previously existed with great freedom and with absence of pain."

If this appeals to him, he may proceed at once to a more thorough examination of the volume; but if it does not appeal, further reading will probably not change his opinion.

The expression "chronic intestinal stasis" seems to mean what has previously been described as "constipation." It is probably true that as doctors grow older, a large majority of them come to regard constipation as a more serious menace to health than they did when they graduated from their medical schools. But to follow Mr. Lane to his extraordinary conclusions will still remain, in the opinion of the reviewer, beyond the power of most physicians—whether old or young—and this is fortunate.

The title of the book is a misnomer since the only pages really devoted to operative treatment are from page seventy-four to page eighty-three. The other three hundred pages are either a discussion of treatment in general, or an exposition of the views and theories of Mr. Lane and others on chronic intestinal stasis; or on subjects which seem to them related in some way to this condition. In other words, this volume may be interesting but it is not convincing; it calls to mind the old saying, "If people like this sort of a book, then this is the sort of book that such people will like."

The type, diagrams, pictures and binding are better than the average.

Oxford Loose-Leaf Surgery. By various authors. Edited by F. F. Burghard, M.S. (Lond.), F.R.C.S. (Eng.), Colonel, A. M. S.: Lecturer on Surgery and Surgeon to King's College Hospital; Consulting Surgeon to the

Children's Hospital, Paddington Green, London, Eng.; and Allen B. Kanavel, A.B., M.D., F.A.C.S., Lieut. Col. U. S. A.; Associate Professor of Surgery Northwestern University Medical School; Attending Surgeon, Wesley and Cook County Hospitals. Chicago, Ill. In five volumes, over 1800 illustrations. Volume I. New York; Oxford University Press. American Branch: 35 West 32nd Street, London, Toronto, Melbourne, and Bombay. 1918.

The first of the five volumes which are to make up the completed work, is a book of a little less than 1000 pages, printed in large, clear type on good paper, and illustrated by 350 pictures. Unlike many text-books, the cuts have not been reduced but remain of large size, sharp in outline, excellent in drawing, and in most cases original.

In the brief half-page preface, signed by both the American and the English editor, the aim of the work is outlined:

"Surgery is no longer 'a mere mechanic art.' Out of the old surgery which placed so great a stress upon technique a new surgery is being evolved, a new conception is being formed, the application of which belongs to no passing event, the future of which no one can prophesy.

"Functional surgery, if one may use the term, belongs to all the future. Take, for example, abdominal diagnosis, where the mechanism of pain is a question of vast complexity, and the evaluation so essential to diagnosis. Again, the latter-day investigation of anaesthesia opens a new field and warns the surgeon that every function of the nervous system must be given detailed consideration. The study of antiseptics has linked Ehrlich's conception of chemical action with the daily technique of the operation room and extended the domain of bacteriology in the scientific treatment of wounds. It is such advances as these that we have attempted to incorporate with the portrayal of the technique of various surgical clinics. The foundation was found in Burghard's Surgery, whose various contributors in collaboration with the editors have added proved procedures from American clinics and revised the various chapters in the light of the developments in surgical practice produced by experience in war."

We may assume that the editors considered carefully the size of this new surgery before deciding in favor of five volumes; the arguments for and against so large a work are familiar to all. The loose-leafed system, if it shall be found to be mechanically equal to the demands necessarily placed upon it, certainly diminishes the force of the most effective argument against big systems; *i.e.*, that the first volume needs revision as soon as the last one is issued; loose-leafed encyclopedia have worked well; perhaps the loose-leafed surgery will be equally successful.

The contributors to the first volume are,—Percy Sargent, M.B., B.C. (Cantab.), F.R.C.S. (Eng.), D'arcy Power, M.B., (Oxon.), F.R.C.S.; Dunlap Pearce Penhallow, S.B., M.D., (Harv.); C. H. Browning, M.D., D.P.H. (Oxon); Major J. W. H. Houghton, M.B., B.C. (Dub.); P. L. Guiseppi, M.D., F.R.C.S.; H. Edmund G. Boyle, M.R.C.S., L.R.C.P.; A. Goodman Levy, M.D.

The proportionate amount of space given to the various subjects does not seem well determined: for instance, the section on Amputations is unnecessarily long: nearly 200 pages: the same is true of Ligation of Arteries, 112 pages: while Anesthesia is given only 60 pages.

The section on Anesthesia is not satisfactory. Ether and chloroform are omitted entirely (except for a brief chapter on "chloroform deaths"). Novocain or procain is not mentioned in Local Anesthesia, and recent work of scientific value in the chemical aspects of anesthesia is not described. On the other hand, hyoscine-morphine twilight sleep in obstetrics might be omitted.

Section VII. Injuries of Joints, 100 pages, by Sir Robert Jones is the best in the book; and Dr. Bristow's chapter upon the treatment of Joint and Muscle Injuries also deserves commendation.

On the whole, the work may be said to promise well, and merits careful examination and study.

* * *

DIRECTORY OF THE MASSACHUSETTS MEDICAL SOCIETY.

Included in the present issue of the Journal will be found the annual Alphabetical List or Directory of the Masachusetts Medical Society, corrected to April 1, 1920. This group of pages is so arranged that it either may be bound in place with the volume, or may be taken from the Journal and used as a separate entity by any who wish to detach it for this purpose.

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THE MENACE OF EUROPEAN AND ASIATIC DISEASES.

With the prospect of more extensive commercial relations between the United States and foreign ports we are threatened with an increasing danger of exposure to the diseases which are ravaging the countries of Europe and Asia. On this subject a warning has been issued by Dr. Hugh S. Cumming, Surgeon General of the United States Public Health Service, who has just returned to Washington after two years of careful study of conditions in the Old World. Dr. Cumming has reviewed the situation and emphasized the necessity of taking the utmost precaution against the introduction of disease into the ports of this country.

The epidemic of influenza has been responsible for the loss of millions; scarcely a place in the world escaped infection during 1918-1919. Other epidemic diseases are sweeping through Asia and eastern and central Europe, threatening so to reduce man power that normal and vital industries can not be maintained. Although there are unfortunately no reliable statistics available for the countries which appear to be suffering most, Dr. Cumming has made comparisons to illustrate the human and economic loss due to preventable diseases. In the United States in a normal year, for instance, for each person gainfully employed there is a loss of nine days due to sickness, a large part of it being preventable. There were approximately 290,000 deaths from pneumonia in the United States in 1918. For every death from pneumonia in the United States we count 125 sick days. There were over 13,000 deaths from typhoid fever. A death from typhoid fever corresponds to a loss of from 450 to 500 sick days. There were over 150,000 deaths from tuberculosis. A death from tuberculosis corresponds to slightly more than 500 sick days among whites and slightly less than this among colored. While it is true that these are diseases in which the death rates are high, that is not the chief factor in causing the high economic loss to the world due to a disease in which the mortality rate is low. Although conservative estimates place the number of cases of malaria fever in the United States at above 7,000,000 cases annually, the death rate gives no indication of this high prevalence. Yet each case of malaria fever represents a loss of several working days and a continued lowering of efficiency. If we could eradicate this malaria in the South, and other preventable diseases throughout the nation, the increased efficiency in man-power would far more than offset the loss to the United States due to the war and the influenza epidemic.

In a number of countries of the Old World production has ceased, or become inadequate, as a result of disease. Large fertile areas have not been cultivated since the war; industries are idle, or practically so. In addition to this, we are facing an extensive spread of pestilential diseases; yet these dangerous diseases can be controlled, for we know a great deal about them. Altogether the economic loss is enormous. Typhous fever is spread by the body louse; bubonic plague by the flea-infested rat; malaria fever is spread by a mosquito.

In the tropical countries malaria is more prevalent than it is in the southern part of the United States. It is also more deadly. In some of the West Indies malaria causes one-fifth of the total deaths. The work at Panama and elsewhere has demonstrated how completely malaria can be controlled by properly conducted sanitary operations.

A careful survey made some years ago in the Philippines convinced experts that the efficiency of labor would be increased 30 per cent. by the eradication of hookworm disease. This is fairly indicative of conditons in some other sections of the world where there is a considerable amount of hookworm. The disease is spread by improper disposal of human excreta, and can be controlled and eradicated if health officers can be properly supported in their work.

In 1917 in the British India there were 267,002 deaths from cholera, 62,277 from smallpox, 437,036 from plague and 4,555,221 from "fevers," a large portion of which were due to malaria. All of the diseases named here are preventable. The disease condition is probably as bad today as it was in 1917. One easily can imagine the economic saving to the world if these preventable diseases could feel the force of a joint attack from the nations of the world. Possibly no single factor could help more to restore the world to a normal basis.

But there is another and more important reason why this world disease situation should concern the United States. We must be constantly alert to prevent some of these highly communicable diseases reaching this country. The typhus fever that is raging in Asia and eastern Europe is filtering through into western Europe. It will require the exercise of every precaution to prevent is becoming epidemic in some of the European nations. If that should occur it would be a gigantic task to keep it from reaching the United States.

Even more dangerous, because more infectious, is the spread from one European port to another of bubonic plague. During the past few years plague gradually has invaded one Mediterranean port after another, so that at present there is probably no important port in that sea which does not harbor plague infection. This is really a very serious situation in view of the great increase in commerce which the United States will soon be carrying on with all the European ports. In addition to the regular quarantine officers in various points in Europe, and the United States, the U. S. Public Health Service is now maintaining a number of experienced quarantine officers in various points in Europe, in order to keep the Service advised. We face a trying situation and need to maintain our defensive machinery in the best possible condition.

SOUTH AMERICAN SURGEONS.

It has been the hope and purpose of the organizers and administrators of the American College of Surgeons that eventually all worthy surgeons of the American continents might be included in the Fellowship of the College. A preliminary effort was made during 1914 and 1915 to interest the surgeons of South America by correspondence setting forth the aims and purposes of the College and expressing the hope that the suggestion of affiliation of North and South American surgeons might be cordially received. Plans were made for a visit by representatives of the College to the southern continent in the winter of 1915--1916; this trip was postponed, however, because of the difficulties attending the European War. It was not until the armistice was signed that further thought could be given to the proposed visit to South America.

The disorganization of European educational institutions and the difficulties of travel in Europe immediately after the war seemed to point to that time as particularly opportune for carrying out the original plan of visiting various countries in South America. On January 7, therefore, Dr. William J. Mayo, President, and Dr. Franklin H. Martin, Secretary-General, sailed from New York to make an official visit to Peru, Chile, Argentine, and Uruguay in behalf of the American College of Surgeons. The short time at their disposal and the difficulties of transportation made it impossible to include Brazil and several other countries in their itinerary. Medical schools and hospitals were visited at Lima, Santiago, Valparaiso, Buenos Aires, and Montevideo. The North American surgeons were received most cordially, and a keen interest was manifested by the leading South American surgeons in the American College of Surgeons. There is reason to believe that this visit will prove to be the foundation for the establishment of a more personal friendship between the professions of our two continents.

In an interesting and comprehensive report of this visit to South America, Dr. Martin has written the following account of the medical schools and hospitals which were visited:

"We visited medical schools connected with the national universities at Lima, Santiago, Buenos Aires, and Montevideo. A primary, high school, and university education is required by the medical schools for the admission of students. Peru, Chile, and Argentine require a seven-year course of medicine, while Uruguay requires but six. So far as we could judge them in our cursory visit, the physical properties of each of these four schools were adequate and modern in every detail. Judging from the provision for free hospital beds in so many of the hospitals of the cities in which the schools are situated, which are under the control of the faculties, the clinical material should be abundant. The laws of each of the governments provide for a reasonable distribution of dissecting materials, and postmortems are an accepted requirement. Our opportunity for meeting a strong group of each faculty was most favorable, and if the faculty as a whole approaches in point of ability the members with whom we became acquainted, the faculties are exceptionally strong. While it was vacation time and the medical schools were not operating at full capacity, we had an opportunity of observing and meeting a large number of students and a larger number of recent graduates who were serving as internes in the hospitals, and I am sure we were agreed that in appearence they compared favorably with those of the United States, Canada, and England.

"The leaders of the faculties are men who have supplemented their home training by study in France, Germany, or other foreign countries, while a few have been in the United States. One cannot but realize that these medical schools are built on sound, fundamental bases. However, it was not possible for us in a short visit during the summer vacation season to judge of their present teaching value.

"The hospitals in South America, not unlike the hospitals in other civilized portions of the world, may be divided into several classes. One of the objects of our trip was to obtain a bird's-eye view of the hospitals in the cities we visited. We passed through, very hurriedly, of course, a number of the principal hospitals in each of the capitals, and Valparaiso and a few other cities. With only minor exceptions, they all had suitable buildings and interiors, and opened onto extensive and attractive gardens or patios. Without exception, I believe all of them have a system of case records, and the average of completeness in this respect was above that found in the United States. Everywhere working laboratories, including x-ray outfits, were in evidence and were pointed to with pride. The operating rooms, with but few exceptions, were modern, and contained the most approved sterilizing apparatus. Conveniences for diagnostic purposes, and instruments for operating rooms were in abundance. Nearly all had provision for postmortems, and up-to-date morgues. The provision for graduate internes seemed to be adequate, especially in those hospitals connected with teaching institutions. Nearly all of the large hospitals had rather complete out-door dispensary departments. Some of the hospitals were deficient in modern plumbing. However, a large percentage of the important hospitals were elaborately equipped with these conveniences. Some had the most approved hydrotherapeutic departments, and modern laundries and kitchens were in evidence in nearly all of the larger institutions. The hospitals which did not have the full equipment as enumerated above were not a few, but nearly all of these are in line for a rapid readjustment. Especially is this true since their teachers are thoroughly alive to the requirements of a modern hospital.

"Two defects which were evident in nearly all of the hospitals visited and which appealed to us as rather easy to remedy were the lack of screening against flies, mosquitoes, and other insects, and a well organized system of nursing. The former of these will soon be remedied, and the latter is a difficult problem with which the faculties are wrestling. It was not a defect pointed out by us, but was freely admitted by our hosts."

There was manifested by the surgeons of South America a genuine desire to coöperate and become affiliated in the work of the American College of Surgeons. In the various cities visited the names of eminent South American surgeons were recommended for Fellowship in the College, and it is to be hoped that a closer personal and professional relationship may be established between surgeons of North and South America by their affiliation with the American College of Surgeons.

THE VALUE OF NITROUS-OXIDE-OXYGEN ANAESTHESIA IN MILITARY AND CIVILIAN PRACTICE.

Our attention has been called to two interesting addresses on related subjects, one by Dr. George W. Crile of Cleveland before the seventy-third annual meeting of the Ohio State Medical Association, and the other by Dr. Addison G. Prenizer of Charlotte, North Carolina, at a meeting of the Southern Medical Association. Both or these addresses give evidence of the value of nitrous-oxide-oxygen anesthesia in military and in civilian practice. Dr. Crile has emphasized the value of anociation in reducing operative mortality, and has stated that the Interallied Surgical Conference adopted as one of its conclusions that in the treatment of wounded soldiers the anaesthetic of choice is nitrous-oxide-oxygen combined with local anaesthesia. In support of this view the following experiences of Captain Gregory Marshall, Chief of the Anaesthetic Service of the British Army, and of Captain Douglas C. Taylor, a British military surgeon, have been mentioned.

Until the summer of 1917, Captain Marshall invariably gave ether for Dr. Taylor's laparotomies for gun-shot wounds of the abdomen, with a result that no series of one hundred consecutive cases showed a recovery rate of much over fifty per cent. During the summer and autumn of 1917 Captain Taylor did one hundred and one laparotomies for abdominal wounds, and nearly half of them were given nitrous oxide and oxygen combined with infiltration of the abdominal wall with eucain and novocain. The more serious cases, those with rapid pulse and low pressure, were nearly all operated by this method. Of this series, twenty-seven died at the Casualty Clearing Station, and seventy-four were evacuated to the Base; of the latter there have been only two deaths, both from secondary hemorrhage, one from the kidney and the other from the rectum and buttock. By the employment of anociation, therefore, Captain Taylor's mortality rate was reduced from approximately fifty per cent. to twenty-nine per cent.

The experience on a large scale of the resuscitation teams from the Lakeside Unit which served continuously throughout Field Marshall Haig's great offensives in Flanders in 1917, during which there were over 800,000 casualties, showed that in abdominal operations somewhat better results were obtained if, before the beginning of the operation sufficient blood were transfused to permit a safe performance of the operation; and again at the completion of the operation an ample amount of blood up to 750 c.c. were given. Furthermore, if a let-down appeared later, the transfusion might be repeated. Meanwhile the advantages of comfort, rest, warmth, morphia and fluids were added.

The advantages of the nerve-blocking are further emphasized by Colonel Cabot's series of 180 amputations of the thigh, one-half under ether, and one-half under spinal anaesthesia with a reduction of mortality by the use of spinal anaesthesia of 50 per cent.

In reporting his experiences with anaesthesia in war surgery, Dr. Prenizer, formerly Chief of Surgical Service, Base Hospital No. 6, A. E. F., has stated that nitrous-oxide-oxygen was used only between September 10 and November 14, 1918, not because the surgical staff did not prefer it, but because the Unit was late in receiving its apparatus and was not able to secure more gas when the first supply was exhausted. During a period of sixty-five days, a total of nine hundred and eight anaesthesias were given as follows: ether, 473; nitrous-oxide-oxygen, 341; local, 87; chloroform, 7. Ether was used more frequently than other anaesthetics; there were a number of infiltration anaesthesias with novocaine and cocaine; little chloroform was used. Ethyl chloride was rarely used as a general anaesthetic, although it was used locally for small incisions. There was but one death which could be attributed to an anaesthetic and that was a death from chloroform in unskilled hands.

Dr. Prenizer believes that the tranquility of the patient, the rapidity and ease of induction, the rapidity and safety of recovery, give nitrous-oxide-oxygen quite an advantage over the other anesthetics in the first and second stages of anaesthesia, especially in cases where an absolute relaxation is not needed. Even when ether is superimposed for deeper anaesthesia, the amount is reduced to a minimum to maintain the period of relaxation.

The types of cases where gas-oxygen was found to be most valuable included shock cases, cases where operation was to be of short duration, cases where the condition was profoundly bad and the post-operative period treacherous, chest cases, with the exception of those liable to show hemorrhage, and infection of the respiratory tract. Gas-oxygen is of great value in war surgery since the greater number of delayed primary and secondary suture of wounds can be made with the use of this anesthetic alone. Dr. Prenizer mentions three special advantages of gas-oxygen in war surgery: (1) the ease and rapidity of inducing anaesthesia, thus preventing a struggle, enabling the immediate beginning of the preparation of the field of operation and the carrying on of several parallel operations without the one disturbing or distressing the other; (2) rapid recovery and rapid exchange of patients between operating room and ward; (3) the relief from the care of recovering patients on the wards and the consequent liberation of the personnel for other duties. All these points are important when one considers the large number of secondary wound closures—often as many as sixty in a single day. The comfort of the patient is also a decided advantage. There was no death nor injury from this anaesthetic.

WESTWARD MIGRATION OF INDIGENT TUBERCULOUS PERSONS.

It is a common and fallacious belief held by hundreds of tuberculous persons that the climate of Denver is so favorable to the cure of tuberculosis that the mere being there, even if without funds, will bring relief to the sufferers. Our attention has been called to the Denver Anti-Tuberculosis Society to the disastrous results of this belief. It has been estimated by the United States Public Health Service that at least four hundred tuberculous persons go to Denver each year without sufficient money for adequate treatment. They arrive at their destination, often penniless and without having made any inquiries or provisions for their needs, expecting to maintain themselves by some sort of light work. To find such work, however, or work of any kind for a person with active tuberculosis, is practically impossible, as the demand for it is always many times greater than the supply.

Since Colorado has no state tuberculosis sanatorium and Denver has no such municipal institution, the care of these persons is limited to the following places, which are so overtaxed continuously that it is a long and difficult matter to gain admittance. There are two free Jewish sanatoria with a capacity of one hundred and fifty beds each, which accept a certain proportion of Gentiles. Patients must apply from their place of departure, and await notification before going to Denver. The waiting lists are always long, and it is usually months before an applicant can be admitted. The County Hospital and the County Poor Farm have a combined capacity of fifty-nine beds. Only those persons having at least one year's legal residence in Denver are eligible for admission. There is also a small home for a dozen destitute women, and a small tent colony for indigent tuberculous men, located on the outskirts of the city and maintained by public subscription.

The tuberculous person who seeks to regain his health in Denver should have sufficient funds for at least two year's good care. A few weeks or months in a lodging-house, or even in a sanatorium, seldom result in any lasting benefit, and often are merely a waste of time and money. Plenty of good food, rest, fresh air, and medical attention are absolutely necessary for recovery, and must be continued over a sufficient length of time to secure an arrest or a cure. A person without funds can not be provided with these essentials; the resultant anxiety, homesickness, hopelessness, and desperate necessity of working before he is able, especially if he has a dependent family, usually lead to a breakdown far more serious than the original condition.

A number of communities in different parts of the country are now making an earnest effort to control tuberculosis among the indigent and those without sufficient funds. It is to be hoped that more states will awaken to their individual responsibilities and will build state sanatoria with capacity to care for all their indigent tuberculous. In the meantime, every effort should be made to dissuade indigent tuberculous persons from undertaking the disastrous journey to Denver; for although a favorable climate may facilitate cure, the patient who is unable to pay for food, rest, and proper care in Denver and can obtain them at home, has a better chance of recovering if he remains where he is.

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MEDICAL MISSIONARY WORK IN CHINA.

AN interesting account of medical missionary work at a frontier station in China is given in a issue of "*Fenchow*," a Chinese magazine published at Fenchow in the province of Shansi. In Fenchow there has been established a missionary outpost, where a hospital of considerable importance and an active staff care for the health of the natives in far-away China. Dr. Percy T. Watson, head of the medical group in Fenchow, has outlined some of the phases of the work.

One of the diseases of most serious proportions is smallpox, which is endemic to such an extent that practically all who have not been vaccinated contract the disease. Innoculation is practiced, for which human serum is used; although vaccination protects the natives for a considerable period of time, it is usually necessary to repeat it after a number of years have elapsed. It is said that in China a woman does not count her children until after they all have had smallpox.

In dealing with diseases among the natives of China one of the most serious obstacles to be overcome is the fatalism of the people. In a city attacked by pneumonic plague, for instance, the mortality in the past has been not far from one hundred per cent. among those having the disease, a fact which may be due in part to the prevalent belief that if the time has come to die nothing can be done to prevent it and the inevitable may as well be accepted without any particular struggle. In the outbreak of 1918, however, efforts were made to combat this doctrine by educating the people. More modern methods, such as the wearing of masks, began to replace the practice of putting scissors in the doorways to warn the demons or to cut them in two. Careful search was made for every focus of infection, and such districts were put into immediate communication with the rest of the province. An arrangement was made whereby the whole telephone system was open every morning at the time when reports were given in headquarters in order that the reports of his associates might be available to any doctor. In the education of the people thousands of dollars were expended on literature. It is a serious work which is undertaken by the medical missionaries of China, not only in administering to the sufferers but also in training natives to assist them in carrying on the work. It is for the interest of America to answer the call for further support in fighting the plagues in the distant lands where they are endemic.

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THE LONGEVITY OF PHYSICIANS.

WHILE it is unfortunately true that the average expectation of life of physicians is not high. the fact remains true that of recent years a number of physicians have shown remarkable longevity, notable in the case of the oldest living graduates of Harvard College, several of whom in the past few years have been physicians. A year ago the oldest living graduate was Dr. Nicholas E. Soule, '45, of Exeter, New Hampshire. He was succeded by Mr. Charles French, who has just died, on March 25, in his ninety-fourth year.

It is interesting to note that now, for the second time within a period of about a year, it is again a physician, Dr. Horatio Robinson Storer, who survives as the oldest living graduate of Harvard College. Dr. Storer was born in Boston on February 27, 1830, the son of Dr. D. Humphreys Storer. After graduating from Harvard with the class of 1850, he went to Europe for further study and for a year assisted Sir James Simpson of Edinborough, the discoverer of chloroform. After four years abroad, Dr. Storer returned to America, and made widely known the uses of chloroform in this country. He became particularly interested in the modern methods of treating diseases of women; his work in this field became so widely recognized that he was made an honorary member of medical societies in all parts of the world. It was Dr. Storer who founded and for a long time was the editor of *The Boston Journal of Gynecology*, the first medical periodical in the world devoted entirely to diseases of women. Dr. Storer has been particularly interested in collecting medals which have any bearing on medical science; a collection of twenty-five hundred of these was presented by him to the Boston Medical Society.

In 1872 Dr. Storer became infected while operating, and although he spent five years in Europe endeavoring to regain his health, it availed but little. In 1877 he made his home in Newport, Rhode Island, where he still lives, taking an active interest in every sort of problem.

BIOGRAPHY OF SIR WILLIAM OSLER.

Lady Osler has requested me to prepare a biography of her husband, and I will be most grateful to anyone who chances to see this note, for any letters or personal reminiscences, or for information concerning others who may possibly supply letters.

Copies of all letters, no matter how brief, are requested, and if dates are omitted it is hoped that they may be supplied if possible.

If the originals are forwarded for copy they will be promptly returned.

Harvey Cushing, M.D.,
Peter Bent Brigham Hospital,
Boston, Mass.

REGISTERED PHYSICIAN IN AVON, MASSACHUSETTS.

In the issue of the Journal for March 25, 1920, in an editorial entitled "The Problem of the Community without a Physician," it was stated that there are at the present time in Massachusetts seventy-three towns without a registered physician. We regret exceedingly that there was erroneously included in this list the town of Avon, Massachusetts, which has a registered practicing physician, Richard E. Elliott, M.D.

MEDICAL NOTES.

Election of Dr. W. S. Halstead.—It has been announced that Dr. W. S. Halstead, of the Johns Hopkins University, has been elected to honorary foreign membership in the Royal Academy of Medicine of Belgium.

Resignation of Dr. George Blumer.—Dr. George Blumer has resigned from the Yale School of Medicine, after serving for thirteen years as professor of medicine and ten years as dean.

Award of the Christian Fenger Fellowship.—The Christian Fenger Fellowship has been awarded to Dr. Harry Culver, of the University of Illinois Medical School, for the year 1920. Dr. Culver will continue his studies on infection of the kidneys.

The Regius Chair of Medicine at Oxford.—Sir Archibald E. Garrod, K.C.M.G., M.D., F.R.S., has been appointed Regius Professor of Medicine in the University of Oxford, to succeed the late Sir William Osler. *The British Medical Journal* contains the following mention of his medical achievement:

> We congratulate Oxford on securing for its chair of medicine so distinguished a scientific physician, and a teacher held in such affection by his pupils. Sir Archibald Garrod is physician to St. Bartholomew's Hospital and consulting physician to the Hospital for Sick Children, Great Ormond Street. He served during the war as consulting physician to the Mediterranean Forces with the rank of Temporary Colonel, A.M.S., and after his return was appointed director of the newly formed medical "element" in the clinical teaching unit at St. Bartholomew's. He was Bradshaw lecturer in 1900 and Croonian lecturer in 1908 at the Royal College of Physicians of London, and was elected a Fellow of the Royal Society ten years ago, largely in recognition of his work in chemical pathology. In 1914 he gave the address in medicine at the annual meeting of the British Medical Association at Aberdeen, and received the LL.D. of that University *honoris causa*. His war services were rewarded with the C.M.G., and later the knighthood of the same order; and the University of Malta conferred on him the honorary M.D. degree.

Appointment of Dr. G. Canby Robinson.—Dr. G. Canby Robinson has resigned as dean of Washington University Medical School, St. Louis, to become dean and professor of medicine in Vanderbilt University, Nashville, Tenn.

Memorial to Sir William Osler.—It was decided at a public meeting held at Oxford University to form as a permanent memorial to the late Sir William Osler the "Osler Institute of General Pathology and Preventive Medicine."

Honorary Elections for American Physicians.—The Royal College of Surgeons of England has elected as honorary fellows Professor J. M. T. Finney of the Johns Hopkins University and Dr. Charles H. Mayo of Rochester, Minn.

Appointment of Professors in Germany.—It has been reported that in the appointment of professors to German universities, precedence is being given at the present time to university teachers who have left towns which have passed out of Germany's possessions. In accordance with this principle, Professor Hugo Fuchs, recently appointed anatomist at Königsberg, has been transferred to Göttingen

Tuberculosis in Residential Institutions.—*The British Medical Journal* states that at a conference of medical superintendents of sanatoria, training colonies, and hospitals for tuberculosis, held in London, it was decided to form a new society for the advancement of the standards and the improvement of the methods of administration, diagnosis, and treatment of tuberculosis in residential institutions. Membership in this society is to be limited to medical men and women whose duties consist for the most part in the medical management of residential institutions mainly devoted to the treatment of tuberculosis. Associate members may be elected from among those who have held such positions at some time and from present junior officers of such institutions. The society will hold quarterly meetings.

Drug Price Changes.—A report issued on March 25 states that during the week drug prices tended to be higher. Manufacturers have advanced carboys. Denatured and wood alcohols are higher, as well as citric and tartaric acids, caffeine, terpin hydrate, quicksilver, and blueflag root. Antipyrine, bayberry bark, colchicum, althea and blood root, arnica flowers, agar-agar and bayberry wax are lower.

New York Clinic for Drug Addicts.—The health department clinic for drug addicts in New York has been closed because the number of persons being treated has fallen below one hundred. The city's registration bureau, which has been operated in connection with the clinic, is to be continued, and the drug clinic will be reöpened if the number of drug addicts increases. Between six and seven thousand addicts have received treatment at the clinic during the last year. Dr. Copeland, Health Commissioner of New York, is reported to have stated that the United States imports fifteen times as much opium per capita as any other nation and that ninety per cent. of that imported is sold unlawfully.

International Society of Surgery.—The following announcement of the programme of the meeting of the International Society of Surgery, to be held in Paris on July 19 to July 23, has been published in the *British Medical Journal*:

In the discussion of the surgery of the heart and great vessels M. Tuffier (Paris) will deal with the heart, M. Sencert (Strasbourg) with the great vessels, and M. Jembraux (Montpellier) with the transfusion of blood. The discussion on treatment of tumours by x-rays and radium will be opened by M. Régaud of Paris, and Dr. N S. Finzi of London. The discussion on analysis of the blood and biological reactions in surgical affections will be opened by Drs. A. Depage and Goovaerts of Brussels. In opening the discussion on fractures of the thigh Major Maurice Sinclair, C.M.G., D.S.O., R.A.M.C., will be associated with M. Patel of Lyons, and in that on the prophylaxis and treatment of tetanus Colonel Cummins, C.B., C.M.G., A.M.S., will be associated with M. Donati of Modena. Professor W. W. Keen of Philadelphia will preside over the meeting, and the names of American contributors to the discussions will be announced later.

Reduction of Mortality from Typhus Fever.—A report of conditions in Russia states that the mortality from typhus fever has been reduced from forty-seven per cent. to six per cent. by the use of a new serum adopted by Red Cross workers at Ekaterinodar, on the Kuban district of Russia. It is hoped that this serum may save Russia from decimation by typhus.

Typhus Fever in Poland.—A recent report of the typhus situation in Poland states that there are 230,000 cases of typhus in Poland at the present time, and that ninety-five per cent. of the population are suffering from the disease. Poland possesses the finest sterilizing equipment in the world, as several hundred steam sterilizing machines were sold to that country by the United States after the war. The Polish government is unable to make use of this equipment because of the lack of money with which to buy coal, and American relief organizations have not been in a position to take over the work.

Proposed New Library Building at Johns Hopkins.—Plans are being considered at Johns

Hopkins University for the erection of a new library building to include under one roof the libraries of the hospital, the school of hygiene, and the medical school.

Honorary Degree for Professor Anton J. Carlson.—It has been announced that an honorary medical degree has been conferred by the University of Lund, Sweden, on Professor Anton J. Carlson, chairman of the department of Physiology of the University of Chicago. Professor Carlson has been elected also a corresponding member of the French Biological Society.

Resignation of Dr. George Blumer.—After serving for thirteen years as a professor of medicine at Yale University, Dr. George Blumer, dean of the Yale School of Medicine, has resigned.

Gift to American Hospital at Neuilly.—In memory of her late husband, Colonel Robert Bacon, Mrs. Bacon has placed at the disposal of the Trustees of the American Hospital in Paris the sum of 4,946,000 francs, to be devoted to the endowment of twenty-four beds in free wards of the new American Hospital which is to be built at Neuilly. Colonel Bacon was President of the American Hospital, and took a great interest in its welfare. The remainder of one of the war funds, 750,000 francs, has been transferred to the building fund of this hospital, the sum to insure erection of that part of the building which will be devoted to the free wards endowed in memory of Colonel Bacon.

Anti-Malarial Work in Dallas, Texas.—A recent Public Health Report describes the anti-malarial work which has been carried on in Dallas, Texas. The work was begun in May, 1916. During the first year, creeks and natural water courses were brushed, channeled, and trained, pools of water were drained, and oil operations were begun for the prevention of mosquito breeding in places where it was not prevented otherwise. In order to mold public opinion and secure the best possible coöperation an educational campaign was conducted. During the season of 1916 the work covered an area of approximately six square miles, and included the brushing, ditching, and oiling of thirty miles of stream. The actual cost per capita for 1916, on the basis of a population of 140,000, was two cents. The total area under control during the season of 1919 was 10.5 square miles, and included the maintenance and oiling of forty-five miles of creeks and ditches. The per capita cost for 1919 was 2.54 cents on the basis of a population of 168,000. In measuring the results of this anti-malarial work, the following figures are significant:

> During the twelve-month period ended Aug. 31, 1916, 27 deaths from malaria were reported in Dallas. As stated in this report, malaria-control work was begun on May 9, 1916. For the succeeding twelve-month periods since 1916 the mortality figures are: 1917, 9 deaths; 1918, 11 deaths; 1919, 6 deaths.
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> These reductions in malaria deaths have taken place despite the increase in population of the city from 140,000 in 1916 to 170,000 in 1919. Averaging the malaria deaths for the past three years, therefore, it is apparent that the death rate in Dallas has been reduced from 19.3 per 100,000 in 1916 to an average of 5.4 per 100,000 since 1916. This is a reduction of 72 per cent.

These figures give ample evidence of the value of anti-malarial work to any community.

Election of Dr. John J. Abel.—Dr. John J. Abel, professor of pharmacology at the Johns Hopkins University, has been elected an associate member of the Royal Society of the Medical and Natural Sciences of Brussels.

Memorial Meeting to Dr. Horatio C. Wood.—At a special meeting of the College of Physicians of Philadelphia held on March 19 as a memorial to Dr. Horatio C. Wood, Dr. George E. de Schweintz read a memoir to Dr. Wood, Dr. Hobart A. Hare read a paper entitled "Recollections of a Pioneer in Pharmacology in the United States," Dr. Francis X. Dercum, "An Appreciation," and Dr. Charles K. Mills, "Reminiscences, Chiefly Neurological and Medico-Legal."

Honorary Election of Professor Warren H. Lewis.—The Society of Medicine of Gand has elected as an honorary member Professor Warren H. Lewis of the Johns Hopkins Medical School.

American Association of Anatomists.—The program of the meeting of the American Association of Anatomists held at the National Museum, Washington, D. C., from April 1 to 3, included about fifty papers and fifty demonstrations.

Combating Typhus in Siberia.—The difficulties of combating typhus in Siberian regions have been described by Dr. Henry W. Newman, who for the past two years has been struggling with this disease as a Red Cross representative in Western Siberia. When temperatures reached thirty and forty degrees below zero, refugees crowded into box cars, freight cars, railroad stations and abandoned sheds and buildings of all descriptions. In one old machine shop, two hundred spent their days and nights. Attempts to transfer them to more sanitary quarters were regarded with suspicion and it was only after force of arms had been threatened that more than twenty of the two hundred could be persuaded to submit to medicated baths to prevent the spread of the disease. The group was finally housed in new quarters, and under the more favorable conditions their health was so much improved that within a year every one had been able to undertake some self-supporting work.

Elections to the Paris Academy of Medicine.—Dr. Léon Barnard, Professor of Hygiene in the faculty of medicine, Paris, has been elected a member of the Academy of Medicine. Dr. Bernard is a well-known writer on the subject of tuberculosis Dr. Lesbre, of Lyons, and Dr. Ligniéres, of Buenos Aires, have been elected correspondents.

Magic and Medicine in Early England.—The following interesting account of an address on "Magic and Medicine in Early England," given by Dr. Charles Singer before a meeting of the British Academy, has appeared in an issue of *The Medical Press and Circular:*

> Having alluded to the Dark Ages, when the supposed possession by persons of magical powers had the greatest possible influence over those of lower culture, the lecturer referred to charms and amulets, the use of some of which still survived in certain districts, where they were worn for the cure of dropsy, ague, and other complaints, some of which were attributed to the worm or serpent.
>
> Rules of health were quoted from old missals, psalters, and liturgical books, and in the course of his address Dr. Singer narrated how in later times, when Lord Chief Justice Holt was an undergraduate, finding himself without money, he obtained a week's lodging free by giving his landlady a magical prescription, consisting of a few Greek words scribbled on a piece of paper, to be placed under the pillow as a cure for ague. Some years afterwards, when presiding at the assizes, a woman was brought before the Chief Justice on a charge of pretending to cure disease by means of a magical parchment. When the paper which formed the basis of the indictment was handed to the Bench it was found to contain the Greek words written by the judge in his college days. The woman was acquitted, and she was the last person to be prosecuted for witchcraft in this country.

Award of the Straits Settlement Medal.—The Straits Settlement gold medal has been awarded by the senate of the University of Glasgow to Professor R. T. Leiper, reader in helminthology in the University of London. Some years ago this medal was founded by Scottish medical practitioners in the Malay States, and it is given periodically to a graduate in medicine of the Scottish universities for a thesis on a subject of tropical medicine.

Appointment of Dr. Robert W. Hegner.—It has been announced that Dr. Robert W. Hegner, associate professor of protozoölogy in charge of the department of medical zoölogy in the School of Hygiene and Public Health, has been appointed from the Johns Hopkins University to attend the Congress of the Royal Institute of Public Health in Brussels from May 20 to May 24, 1920. "The Relation of Medical Zoölogy to Public Health Problems" will be the subject of the paper to be read by Dr. Hegner at the Congress. He expects to study at the Liverpool and London Schools of Tropical Medicine during the months of June, July, and August.

Destruction of Valuable Data by Fire.—The data and records made during two years of research in the cause and effect of influenza by Dr. Thomas M. Rivers were destroyed at a recent fire at Johns Hopkins University. The laboratories of Dr. Bayne Jones and Dr. Lloyd D. Felton, containing apparatus and data of considerable value, were also destroyed.

NEW ENGLAND NOTES.

Oldest Physician in New England.—The oldest medical practitioner in New England, Dr. William M. Parsons of Manchester, New Hampshire, has observed his ninety-fourth birthday. During the day he attended to patients in his office as usual. Dr. Parsons was born in Gilmanton in 1825 and has practised n Manchester since 1875. He served as physician for the board of health for twelve years and performed heroic service during the epidemic of smallpox in 1900. Dr. Parsons maintains a summer residence at Gilmanton, and takes a keen interest in many activities.

War Relief Funds.—The following contributions have been acknowledged by New England War Relief Funds:

French Orphanage Fund	$575,654.18
Fund for Devastated France ..	190,789.60

Scarlet Fever at Brown University.—Because of an outbreak of scarlet fever among the students, it was decided to close Brown University on March 25 until April 8. Twenty-three students are being cared for at the Providence City Hospital, as the college has no hospital facilities of its own. Students have been sent to their homes, and there is to be no quarantine at the college. The outbreak is thought to be due to the food supply. With one exception the cases have been of a mild type. As a precautionary measure, the health authorities of every town and city to which students are returning will be notified of the conditions under which the University has suspended activities and will be furnished with the names and addresses of the students.

BOSTON AND MASSACHUSETTS.

The Central New England Sanatorium at Rutland.—The Rutland Private Sanatorium, situated in the geographical center of Massachusetts, has been incorporated as the Central New England Sanatorium and is being equipped as rapidly as possible for the vocational training of returned soldiers, sailors, and marines who are suffering from tuberculosis. Classes are already in operation and nearly a hundred disabled men are at Rutland taking advantage of the excellent treatment and training which the sanatorium affords. Government instructors are teaching subjects which are believed to be for the best interests of those men who are looking forward anxiously to new fields of occupation. The sum of ten thousand dollars has been appropriated for the equipment of a special school for the vocational training of disabled service men. The workshop, where many patients have regained their ability to earn a livelihood through the handicraft of various kinds which has been taught them, has not now adequate facilities for this additional training; a new building, therefore, is to be erected as soon as sufficient funds make it possible, and a trade school, carried on by experts in trade studies, will be established. This school will afford to soldier patients the opportunity of rehabilitation under the best conditions. The Red Cross has made a gift of twenty-five thousand dollars to be used without restriction in carrying out this project.

Lynn Death Rate.—A report issued by the health commissioner of Lynn shows that the death rate in that city during February of this year increased by nearly one hundred per cent. over that of the same month in 1919. During February, 1920, 224 persons died from various causes, particularly influenza, while in the same month last year 131 deaths were recorded. Of the 224 deaths reported for this year, 97 included persons of more than fifty years of age. Influenza was the cause of 58 deaths, and pneumonia 41. In January, 1920, 121 persons died as compared with 165 for the same month last year. The report on scarlet fever cases indicates that the spread of this disease occurred chiefly in neighborhoods rather than in schoolhouses.

Meeting of the Massachusetts Homeopathic Medical Society.—The eightieth annual session of the Massachusetts Homeopathic Medical Society was held on April 14 at the Massachusetts Homeopathic Hospital in Boston. This Society comprises three geographical districts: the Boston, the Western Massachusetts, and the Worcester districts. During the morning session special clinical demonstrations were held in various departments of the hospital and the out-patient department. Cases of particular interest were presented and methods of treatment explained. At the Robinson Memorial, the maternity department, a special ante-natal clinic was held and methods for determining acidosis shown. In the amphitheatre of the out-patient department methods of taking blood for examination were demonstrated by Dr. Watters, and methods of using radium, the ultra violet ray, and the portable x-ray machine were explained. The usual surgical clinics at the hospital were held for those especially interested.

At the afternoon session of the Society the following papers were read: 1, "The Relation of Certain Factors of Hospital Administration to the Professional Work," H. M. Pollock, M.D., superintendent of Massachusetts Homeopathic Hospital; 2 "Gastric Ulcer," presentation of cases, Charles T. Howard, M.D., surgeon Massachusetts Homeopathic Hospital; 3, "Focal Infection: Some Complications and Sequelae," clinical demonstration, W. F. Phillips, M.D., physician Massachusetts Homeopathic Hospital. At 6.30 P.M., there was a dinner at Young's Hotel. Address, "The Democratization of Medical Practice," Wesley T. Lee, M.D.; address, Lieutenant Governor Cox.

Scarlet Fever in Boston.—Scarlet fever has been more prevalent in Boston this year than for the corresponding period of the last two years. The records show that there have been 828 cases and 25 deaths up to the present time, compared with 480 cases and 11 deaths in the same period last year. Because of the prevalence of the disease, the health department has sent more than twenty thousand circular letters to physicians, parents and school teachers, warning them to take all precautions against the disease. These circulars, signed by Dr. Woodward, Health Commissioner, read as follows:

"Scarlet fever in a mild form is prevalent in and about Boston. Children apparently slightly ill are at times found later to have scarlet fever. Such mild cases often spread the disease before the real character of the illness is discovered.

"If your child has a sore throat, fever, vomiting, or other indefinite symptoms at this season of the year or has a rash of any kind, do not call it stomach rash, canker rash, heat rash, or treat it lightly, but think of scarlet fever. If a child shows any of the above mentioned symptoms, isolate it at once as it may possibly have scarlet fever and should be seen by a physician.

Mild scarlet fever is a very dangerous and treacherous disease and may develop serious complications

"Scarlet fever is very catching in the first week of the disease, when a child is just developing the disease; therefore, immediately isolate children with indefinite symptoms and you will help to prevent others from catching scarlet fever."

Child Health Conditions in Boston.—An analysis of the *Public Health Index*, the official record of the Federal Government on health conditions in the larger cities, has been made by Dr. Robert D. Curtis. The *Index* shows that in spite of the increased mortality rate during 1918-1919, due to the influenza epidemic, child health conditions in Boston have been far above the average during the year. Diarrheal diseases reached the lowest summer mark in Boston's history last year. As one of the chief factors in bringing this about, Dr. Curtis has praised the work of the Baby Hygiene Association, which operates twenty stations in various sections of the city. In discussing the improvement in the local health conditions, Dr. Curtis has pointed out that Boston is now being rewarded for its careful work in caring for children of pre-school age.

Previously, the efforts of the welfare associations were directed to the care of the child during the liquid-food period. As soon as the baby went on a solid-food diet, it was forgotten until it appeared in the public schools. The result was an abnormally large number of children in the schools, with well developed tonsil trouble, or with tuberculosis.

As long as the child was able to describe its aches and pains, home remedies were resorted to and the attention of a physician was not sought until some visible bodily defect was noticed. As a result, the children were entering school with diseased or deformed bodies. This led to an inevitable result—a deficient intellect.

During the past three years several clinics for children between the ages of one and six years have been established by the Baby Hygiene Association. During the past year more than 900 children were treated at these stations. This supplement to the general child-welfare work of the Association has resulted in turning sickly babies into healthy, hardy childhood. The public school teacher has received a pupil well prepared to take up its work.

There is now no excuse for the delivery of a sickly or deformed child to the public schools. Through the machinery of the Baby Hygiene Association every child in Boston can receive the examination of a trained corps of physicians and nurses. The best medical skill in the city is at the disposal of the parents. Proper diet is prescribed; proper clothing taught to the mothers; simple but necessary operations, to make the little body healthy and hardy, are arranged for and performed. Every baby in Boston needs some of this attention to carry it through the critical pre-school period, to make it a bright, healthy, happy child, properly fitted to take up its training for valuable citizenship.

Week's Death Rate in Boston.—During the week ending April 3, 1920, the number of deaths reported was 209 against 240 last year, with a rate of 13.48 against 15.71 last year. There were 38 deaths under one year of age against 35 last year.

The number of cases of principal reportable diseases were: Diphtheria, 30; scarlet fever, 85; measles, 246; whooping cough, 84; tuberculosis, 78.

Included in the above, were the following cases of non-residents: Diphtheria, 2; scarlet fever, 5; measles, 1; whooping cough, 1; tuberculosis, 6.

Total deaths from these diseases were: Diphtheria, 2; scarlet fever, 1; measles, 1; whooping cough, 3; tuberculosis, 23.

Included in the above were the following non-residents: Scarlet fever, 1; tuberculosis, 3.

Influenza cases, 31; influenza deaths, 3.

Appointment of Dr. Sumner C. Andrews.—Dr. Sumner C. Andrews of Cambridge has been appointed by the Civil Service Commission to the position of physical inspector in the Department of Civil Service and Registration, Division of Civil Service.

Appointment to Harvard Cancer Commission.—Dr. M. Douglas Flattery, formerly a professor of physiology, has been appointed a member of the Harvard Cancer Commission. Dr. Flattery has been actively interested in preventive medicine, and has endowed and established a number of fellowships and clinics in malignant diseases at the Harvard Medical School and at other universities, including the University of Lyons in France. It is announced that Dr. Flattery has expressed his intention of endowing foundations for the purpose of special study towards the prevention of diseases and preservation of health at a number of medical schools where adequate laboratory facilities already exist throughout the United States and in Europe.

Bequests to Medical Institutions.—The will of the late Miss Sarah C. Townsend of Milton provides for the following bequests to medical institutions: St. Luke's Home for Convalescents in Roxbury, $1,000; Milton Convalescent Home, $1,000; Cullis Consumptives' Hospital in Dorchester, $1,000; Boston Home for Incurables, $500; Convalescent Home of the Children's Hospital in Wellesley Hills, $500, as an endowment fund for hospital beds.

The Lynn Hospital has received the sum of $5,000 by the will of the late Miss Lucy C. Mudge of that city. The sum of $1,000 has been bequeathed to the Boston Floating Hospital.

The will of the late Wallace L. Pierce includes the following bequests: $5,000 to the Home for Incurables in Dorchester; $10,000 to the Children's Hospital, and $5,000 to the Boston Lying-in Hospital

The will of the late Miss Caroline Sanborn of Brookline includes a bequest of $2,000 each to the Boston Floating Hospital and the Instructive District Nursing Association.

The will of the late Dr. Emma V. P. B. Culbertson of Boston gives $5,000 to the trustees of the New England Hospital for Women and Children, the income to be used for the department of pathology. A fund was bequeathed also to the Women's Medical College of Pennsylvania, the income to be used for worthy women students.

Meeting of the East Boston Medical Society was held in Walcott Hall, East Boston, Friday, March 28, 1920. Fred L. Bogan, M.D., talked on some interesting complications during the course of acute otitis. Light refreshments were served. During the social period Dr. Bogan told interesting stories of his medical experiences with the 26th division in France.

R. H. Houghton, *Secretary.*

Correspondence.

APPETITE VERSUS THERAPEUTICS

Cambridge, 24 March, 1920

Mr. Editor:

Inadvertently, we may presume, your clinically experienced correspondent whose letter anent the supposed bedside use of alcohol appears in the Journal (March 18) in reply to my previous letter captioned "Appetite Versus Therapeutics" (19 February, 1920) helps to corroborate my claim therein that "the flu-bug itself is not more elusive than the physician who will explain for what and why he prescribes the substance." Says Doctor Beverley Robinson, "To many practitioners of medicine of high clinical attainment, no agent is so valuable as alcohol in the treatment of many threatening acute diseases." The remainder of his brief letter is made up mostly of the further generality that laboratory findings are of little account in practical medicine. An unfortunate misprint of some kind renders doubtful the meaning of two sentences: "There are men who have followed science closely in medicine, so far as maybe, and hold it compatible with the best care of patients. Beyond a limited degree its teaching is illusory and vain." But the rest is plain enough.

With such an excellent opportunity and with so surprising an amount of clinical human benefit to accrue, it is rather strange that your experienced correspondent did not explain for what and why he prescribes alcohol in clinical medicine. The failure of laboratory medicine to make good all-round physicians only puts a still more insistent burden on the conscience of those who have the experience never, let us hope, "faulty or pernicious," as he might say. Hardly ever.

The late Professor Abraham Jacobi of New York (born in Prussia in 1830 and in detention in Berlin and Cologne as a German revolutionist and for high treason 1851-53: see *Who's Who*) was perhaps the most famous children's clinician accustomed to stand up for alcohol even after it was medically down. In the *New York Times* for September second, 1917, in the course of a short article (sent broadcast as a pamphlet afterwards by some one or other), he writes this:—

"Alcohol preparations, always taking small doses for granted, are good stomachics; that is, they aid you in your digestion. Mr. Beverley Robinson tells us in a recent interview that he takes, and requires a small dose of diluted whisky with his meal. From three to six ounces of a mild wine will render the same service. One-third of that I took once a day until half a year ago, and shall be pleased to return to that when my objections to it shall have been removed. Maybe other people, of different sex or age or disposition, will require another dose, larger or more frequently. And those who are forbidden by their health, or ill health, kidney troubles, or 'hardening arteries,' will be guided by their contradictory indications.

We doctors are wrought up about the subject of alcohol, always were, and now more so since, we have been officially told that we must shun prescribing alcohol in any shape. We were always of the opinion that alcohol was to be shunned as the cause of arteriosclerosis, cirrhosis of the liver, delirium tremens, poverty, and immorality; but what is worse, and you may have been told, alcohol has been held up to me and my 150,000 colleagues all over the Union as the coarsest crime possible. The most imminent danger is the avalanche of new books and pamphlets on the subject of alcohol.

The value of alcohol should not be estimated or supposed, but studied and demonstrated. A prohibition movement kept up by '400,000 women' is no proof. Nor are 600 Congressmen capable of deciding a scientific problem, though fortified by a caucus."

He then goes on to state some of the conditions in which he, at 87 years of age, thinks alcohol is useful. The article in the *Times* closes thus:

"A moderate quantity of alcohol may actually take the place in nutrition of a dynamically equivalent quantity of fat or of sugar. Were it not possessed of other qualities, the food value of alcohol would, therefore, be measured by its full calorie value. But, unlike foodstuffs more strictly defined, alcohol exerts effects as a drug which cannot be ignored in appraising its value as a food. These effects become more important when the individual is called upon to do strenuous work or to endure exposure. * * * The records of American industrial experience are significant in showing a better output where no alcohol is taken by the workmen.

"There is little need to decide how far these effects are purely physical, or to what degree they are psychological. The facts show that the value of alcohol as a source of maintenance and of work-power for the nation cannot, as in the case of a normal foodstuff be legitimately measured by its gross caloric value."

"The following is added as a memorable historical fact. In *The Evening Mail* of July 27, 1917, I meet with the following lines:

"Unrest and even strikes have been caused in different parts of England because of a demand by the workmen for an increased quantity of beer. As a result, the output of munitions has been lowered, and the conduct of the war interfered with. The Government has decided to permit the brewing of more beer.

"Let this be enough for today!"

There is here quite a bit of significance of one kind or another relating to the topic which many have been (and still are?) discussing.

This day, like most of my readers, it is likely, I have received from a "specialist in bonds for physicians and druggists" (what kind of bonds is not specified) a circular offering for a mere bagatelle of five dollars to secure for me my permit for the prescription use of my six quarts each year of non-beverage distilled spirits. He is serving already, he says, "nine thousand users of non-beverage spirits."

This printed letter reads as follows:—"*How New Prohibition Law Effects (sic) Doctors.*

No doctor is permitted to write prescriptions for liquor UNLESS HE HOLDS A PERMIT ISSUED BY THE UNITED STATES GOVERNMENT, permitting him so to do.

No druggist is allowed to fill any prescriptions for intoxicating liquors UNLESS THE PRESCRIPTION IS WRITTEN BY A DOCTOR WHO HOLDS A UNITED STATES GOVERNMENT PERMIT.

Doctors are entitled to Six (6) Quarts of liquor per annum for emergency use, but, IN ORDER TO SECURE THIS SIX (6) QUARTS OF LIQUOR THEY MUST FIRST SECURE A GOVERNMENT PERMIT.

If you want the privilege of writing prescriptions for spirits for medical use of your patients, *you must secure your permit from the United States Government.*

If you want to secure your allowance of six (6) quarts of liquor per annum, you *must first secure a permit from the United States Government.*

I KNOW THE LAW.

I will prepare all documents, ready for your signature, so you will have nothing to do but sign your name!!!

REMEMBER

You cannot buy any liquor for medicinal purposes, UNLESS YOU HAVE A GOVERNMENT PERMIT, and, you cannot prescribe UNLESS YOU HAVE A PERMIT TO PRESCRIBE.

You know how important it is that you have some brandy or whiskey available for emergency use.

The quickest and easiest way for you to secure your permit is to fill in the information called for on the reverse side of this letter and send it to me.

Yours very truly."

On the envelope in big "red type" one is caught with this: "What the U. S. Government allows you to do. I know the law. I will do everything but sign your name."

There certainly ought to be some proper clinical use of alcohol, something very important for mankind, indeed, to thus interest a gentleman in Missouri (already "shown," this time, by at least 9000 cases) in the advancement of medical learning and of clinical experience neither faulty nor pernicious.

But it remains, none the less, in a mind here and there among us 150,000 doctors, a matter of appetite *versus* therapeutics—with the stress on the implied inconsistency of the two.

George Van Ness Dearborn.

NOTICE.

UNITED STATES CIVIL-SERVICE EXAMINATION.

Medical Interne. Saint Elizabeths Hospital.
July 1, 1920.

The United States Civil Service Commission announces an open competitive examination for medical interne. Vacancies in Saint Elizabeths Hospital, Washington, D. C., at $1,200 a year and maintenance, and vacancies in positions requiring similar qualifications, at this or higher or lower salaries, will be filled from this examination, unless it is found in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

Appointees whose services are satisfactory may be allowed the temporary increase granted by Congress of $20 a month.

The positions are tenable for one year. During the year, however, a postgraduate course in mental and neurological diagnostic methods is given, an examination is held, and promotions to the next grade, junior assistant physician, are made. Beyond this there is regular advancement for employees whose services are satisfactory. Saint Elizabeths Hospital has over 3,000 patients and about 800 employees to care for. In addition to the general medical practice offered, the scientific opportunities in neurology and psychiatry are unsurpassed.

Both men and women, if qualified, may enter this examination, but appointing officers have the legal right to specify the sex desired in requesting certification of eligibles.

On account of the needs of the service papers will be rated promptly and certification made as the needs of the service require. In the absence of further notice applications for this examination will be received by the Commission at Washington, D. C., until the hour of closing business on July 1, 1920. If sufficient eligibles are obtained the receipt of applications may be closed before that date, of which due notice will be given.

Applicants must show that they are graduates of a reputable medical college, or that they are senior students in such an institution and expect to graduate within six months from the date of making oath to the application. The names of senior students will not be certified for appointment until they have furnished proof of actual graduation.

Applicants must not have graduated previous to the year 1915 unless they have been continuously engaged in hospital, laboratory, or research work along the lines of neurology or psychiatry since graduation, which fact must be specifically shown in the application.

Unmarried eligibles are preferred.

Applicants must have reached their twentieth birthday on the date of the examination.

Applicants must submit with their applications their unmounted photographs, taken within two years, with their names written thereon. Proofs or group photographs will not be accepted. Photographs will not be returned to applicants.

This examination is open to all citizens of the United States who meet the requirements.

Applicants should at once apply for Form 1312, stating the title of the examination desired, to the Civil Service Commission, Washington, D. C.; the Secretary of the United States Civil Service Board, Customhouse, Boston, Mass., New York, N. Y., New Orleans, La., Honolulu, Hawaii; Post Office, Philadelphia, Pa., Atlanta, Ga., Cincinnati, Ohio, Chicago, Ill., St. Paul, Minn., Seattle, Wash., San Francisco, Calif.; Old Customhouse, St. Louis, Mo.; Administration Building, Balboa Heights, Canal Zone; or to the Chairman of the Porto Rican Civil Service Commission, San Juan, P. R.

Applicants should be properly executed, including the medical certificate but excluding the county officer's certificate, and filed with the Civil Service Commission, Washington, D. C., without delay.

An act of Congress approved July 11, 1919, provides:

"That hereafter in making appointments to clerical and other positions in the Executive branch of the Government in the District of Columbia or elsewhere preference shall be given to honorably discharged soldiers, sailors, and marines, and widows of such, and to the wives of injured soldiers, sailors, and marines who themselves are not qualified but whose wives are qualified to hold such positions.".

Applicants entitled to preference should *attach to their applications* their original discharge, or a photostat copy, or certified copy thereof, or their official record of service, which will be returned after inspection by the Commission.

SOCIETY NOTICES.

Middlesex South District Medical Society.—The Annual Meeting of the Society will be held at the American House, Boston, on Wednesday, April 21, 1920, at 11 a.m. The annual oration will be delivered at 12 o'clock, noon, by Dr. George L. West of Newton Center. Subject: "The Enlarged or Persistent Thymus Gland."

The Annual Dinner will be served at 1 p.m.

Lyman S. Hapgood, *Secretary*.

New England Pediatric Society.—The sixty-first meeting of the New England Pediatric Society will be held at the Boston Medical Library on Friday, April 16, 1920, at 8.15 p.m.

The following papers will be read:

1. "Observations on the Pulse in Childhood," Paul D. White, M.D.

2. "Diagnostic Difficulties in Heart Disease in Childhood," Richard S. Eustis, M. D.

Discussion of both papers opened by J. L. Morse, M.D., and F. S. Churchill, M.D.

3. "Observations on the Cardiac Shadow in Infants and in Children," George W. Holmes, M.D.

Discussion opened by Percy Brown, M.D.

Light refreshments will be served after the meeting.

Fritz B. Talbot, M.D., *President*.
Lewis Webb Hill, M.D., *Secretary*.

Censors' Meeting.—The Censors of the Suffolk District Medical Society will meet for the examination of candidates at the Medical Library, No. 8 The Fenway, Thursday, May 6, 1920, at four o'clock.

Candidates should make personal application to the Secretary and present their medical diploma at least one week before the examination.

The Secretary will be at his office, 352 Marlborough street, Boston, every afternoon between 4 and 5 p.m.

Gilbert Smith, M.D., *Secretary*.

Suffolk District Medical Society.—The Annual Meeting will be held at the Boston Medical Library, 8 The Fenway, on Wednesday evening, April 21, 1920, at 8.15 p.m.

1. Business.—Report of the Officers and Committees af the Society; election of officers; incidental business.

2. The paper of the evening will be by Dr. John Lovett Morse "The Treatment of Indigestion in Older Children."

Guests will be welcome to the second part of the program, which will begin at about 8.45 P.M.

Gilbert Smith, M.D., *Secretary.*
G. G. Sears, M. D., *Vice-President.*

New England Ophthalmological Society.—The next meeting of the New England Ophthalmological Society will be held at the Massachusetts Charitable Eye and Ear Infirmary, 233 Charles Street, Boston, on Tuesday evening, April 20, 1920, at eight o'clock.

Program·

Hospital Cases: Ectropion Uveae, Dr. F. M. Spalding; Asteroid Hyalitis, Dr. F. H. Verhoeff.

Papers: Recurrent Vitreous Hemorrhages, Dr. William Zentmayer, Philadelphia; Metastatic Carcinoma of the Orbit, Dr. George S. Derby.

W. Holbrook Lowell, *Secretary.*

RECENT DEATHS.

Dr. Chester Lansdowne Hull died of double pneumonia at Middletown, Conn., on March 7, 1920, at the age of 38 years. Dr. Hull was a graduate of the Cambridge Latin School and of the Harvard Dental School. He left Massachusetts and began practising dentistry in Connecticut five years ago.

Dr. Frederick F. Gage died on March 15 at his home in West Medford. Dr. Gage was born in Boston on December 2, 1843. He was a graduate of the Boston Dental College and studied dentistry in Paris. He continued his practice of dentistry in Boston until a few years before his death. Dr. Gage married in 1868. He is survived by one son, Dr. I. Bradley Gage of Atlantic, Maine, and two daughters.

Dr. Ernest Major Jordan died at his home in Boston, March 13, 1920, aged 48 years. He was born at Cape Elizabeth, Maine, and was a graduate of the Boston University School of Medicine in 1899. After serving as house officer at the Massachusetts Homeopathic Hospital, he began general practice in Boston, later devoting himself to neurology. He is survived by his widow.

Dr. Charles Dudley Prescott, a retired Fellow of the Massachusetts Medical Society, died at his home in New Bedford, March 26, 1920, aged 75 years. He was born at Meredith, N. H., February 10, 1845, graduated from Dartmouth Medical School in 1867, settled in New Bedford that year and joined the State Society. He was for many years a Councilor of the Bristol South District Medical Society.

Dr. Edward Melville Whitney died at his home in New Bedford February 27, 1920, of pneumonia, aged 64 years. He was a graduate of the Jefferson Medical College in 1879, settled in Fairhaven in 1882 and joined the Massachusetts Medical Society. He had retired from practice for several years.

Dr. Joab Stowell, a Fellow of the Massachusetts Medical Society, died at his home in North Amherst March 26, 1920, of angina pectoris at the age of 57 years, after a few hours' illness. He was a graduate of the University of Minnesota Medical School in 1890. He is survived by his widow, who was Miss Helen Hubbard, and by one daughter.

Dr. Joseph Eddy Clark, a Fellow of the Massachusetts Medical Society, died at his home in Utica, N. Y., March 4, 1920, at the age of 62 years. The cause of death was diabetes and embolism.

Dr. George Latham Underwood, a retired Fellow of the Massachusetts Medical Society, died in Belmont April 1, 1920, at the age of 88. He was born in Boston November 15, 1831. He went to Paris to study art, and while there he met Drs. Cheever, Sinclair, Derby, and Hayward, of Boston, and decided to make medicine his career. Returning to Boston, he studied at the Harvard Medical School, where he came under the influence of Dr. Oliver Wendell Holmes and was graduated in 1858.

During the Civil War he was superintendent and physician at the Rainsford Island Hospital. He first practised medicine in Belmont. A year later he went to Boston and established himself in the South End. In 1899 he retired from his Boston practice and from that time made his home in Belmont.

Dr. Underwood was the son of William Underwood, who came to America from England in 1817 and settled in Boston, where he founded the business firm of William Underwood Company, manufacturer of preserved and canned goods. The business is still continued by his descendants under the old firm name. They were the founders of the canning industry in this country.

In 1859 Dr. Underwood married Kate Lawrence Lyster of Staten Island. Three sons and a daughter survive him.

Sir Thomas Anderson Stuart, professor of physiology and dean of the faculty of medicine in the University of Sydney, died on April 3. Dr. Stuart was born in Scotland in 1856.

The death has been announced of Colonel Louis A. LaGarde, of the Medical Corps of the United States Army. Colonel LaGarde entered the service in 1876 and retired in 1913. He served as surgeon in charge of the base hospital at Siboney during the Cuban campaign· he was mentioned for gallantry under fire in the Powder River expedition; and during the Pulajan insurrection in Leyte, Philippines, he managed forty-two field hospital stations. Colonel LaGarde achieved distinction also as a writer on surgical subjects.

Dr. K. A. J. Mackenzie, dean of the medical department of the University of Oregon, has died at Portland, Oregon, at the age of sixty years. Dr. Mackenzie was born at Cumberland House, Manitoba. He was a graduate of McGill University, Montreal, and of the Royal College of Physicians and Surgeons, Edinburgh. He was one of the first to develop nerve grafting. He is survived by two sons and two daughters.

Dr. George Henry Ames died at his home in Providence, Rhode Island, on March 30 at the age of seventy-two years. Dr Ames was born in Foxboro, Massachusetts. He was formerly a member of the state board of registration in dentistry and for several years he lectured and gave demonstrations at the Harvard Dental School.

Dr. William James Morton has died of heart disease in his seventy-sixth year. His death occurred while he was in Miami, Florida. Dr. Morton was the son of Dr. William T. G. Morton. He was graduated from Harvard University with the class of 1867 and from the Harvard Medical School in 1872 He later studied medicine in Leipsic, Vienna, and Paris. For five years Dr. Morton was professor of the diseases of the mind and nervous system at the University of Vermont.

Dr. Joseph A. D. Jacques died on April 4 of heart disease at his home in Marlborough. He was forty-two years of age. Dr. Jacques was born in Sorel, P. Q., the son of Dambourges Jacques, a physician. He was a graduate of Three Rivers College and of the medical department of Laval College in the class of 1897. He practised for four years at Cochituate and went to Marlborough fourteen years ago. He is survived by his wife, three daughters, two sons, and four sisters.

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Address.*

HELEN HOMANS.

By Frederic A. Washburn,

Late Colonel, M. C., U. S. Army, and Chief Surgeon, Base Section No. 3, American Expeditionary Forces.

We have assembled today to pay tribute to the memory of Helen Homans. She gave her life for France in the World War just as truly as though she had been killed upon the field of battle.

The blood that is within the veins of a man or woman, the family heritage, traditions, and teaching are what determine the conduct of an individual when the time comes for great decisions.

An examination of the antecedents and background of Helen Homans' life furnishes the clue to her actions. Her family has been noted for its connection with medical work and for its patriotic response to the call of the nation in the time of peril. With the exception of a few years at the beginning of the nineteenth century, an interval between the death of one ancestor and the maturity of his son, there has been a John Homans practicing medicine in this vicinity since 1775. Helen Homans' great grandfather, Dr. John Homans, was a surgeon in the Continental Army during the Revolutionary War. From this descent her eldest brother Robert is a member of the Society of the Cincinnati. Her grandfather, Dr. John Homans, was a practicing physician. Her father, again the same name, Dr. John Homans, is well remembered by most of us in this room.

He was graduated as house pupil of this hospital in 1861, joined the regular navy upon graduation, served with it for one year, and resigned to accept a commission in the Medical Corps of the United States Army. He was on duty with the army until the close of the Civil War, from 1862 to 1865. His service was conspicuous and distinguished, well illustrated by the fact that he was medical director upon General Sheridan's staff during the Shenandoah campaign of 1864. None but an able man of initiative and courage would have been chosen for such a position. Uncle John, as we house officers called him, served this hospital from 1876 to 1899 actively, and as consulting surgeon until his death in 1903. We remember him affectionately for his humor, quick appreciation, impatience with pretence, and underlying warmheartedness. His chief claim for distinction here, and that a great one, is that he forced the hospital to permit abdominal surgery to be done within its walls against the opposition of a too conservative board of directors and staff.

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* Delivered December 11, 1919, at the Massachusetts General Hospital, upon the occasion of the unveiling of a tablet to Miss Helen Homans.

Miss Helen Homans' cousin, another Dr. John Homans, was a house officer of this hospital. One of her brothers, again a surgeon, and a graduate of the Massachusetts General Hospital, is the present representative of the name. Three of her brothers were commissioned officers of the United States Army, serving with the American Expeditionary Forces.

HELEN HOMANS

herself was connected with the Massachusetts General Hospital upon the Board of Visiting Ladies, from 1912 to 1917. She was a volunteer in the Social Service Department, working especially with tuberculosis patients during this same period, the latter part of the time working here in the short intervals between the periods of her service in France.

I have gone into some detail of the ancestry of Helen Homans and her previous hospital work to show how naturally she would come to connect herself with medical activities in a military emergency.

She had lived in France for a number of months at one time and grown to love the country. When the brutal attack was made by Germany and all civilization was imperiled, when her beloved France was writhing under the tortures, the agony and death of her children, Helen Homans suffered with her, and longed for the chance to help. The opportunity came when the first Harvard Unit went abroad; and she went with it. She performed the work of a nurse at l'Hôpital de L'Alliance, No. 41, bis Yoetot Seine Tuferienee from May to September, 1915, and again from February to December, 1916. Then for a short period she was in another French hospital. From January to September, 1917, she served in l'Hôpital Auxiliare 109 at Pont Audemes, Eure; and from September, 1917, to February, 1918, she was with l'Hôpital d'Evacuation, No. 18, as a member of the Ambulance Automobile Chirurgicale Nos. 21 and 22, Vasseny, Aisne. Her last position was with l'Hôpital de l'Armée 65 at Pontoise, Seine et Oise, where she served from July to November, and where she died of pneumonia following influenza in the terrible epidemic of that fall.

When taken sick she was in charge of a ward of French wounded. The hospital had been under bombardment and the service was hard and hazardous.

Her services were appreciated by the French authorities, and she was awarded the Croix de Guerre with Palm, in a citation signed by the great French General, Petain, himself. Translated it reads as follows:

> MISS HELEN HOMANS
>
> "With the armies since the twenty-ninth of February, 1916, she has been noted for her absolute devotion to duty, particularly in the Evacuation Hospitals at Courlandon and Vasseny in the bombarded zone and in an Auxiliary Hospital of the Army where she has contracted in caring for the sick wounded soldiers a contagious disease which places her life in danger."
>
> Given at Great Headquarters by the General, Commander-in-Chief, Petain.

What greater honor!

Well earned—we her friends know it to be.

She laid down her life for the France that she loved and "greater love hath no man than this."

Helen Homans would not wish the claim made for her that the free gift of her all to the cause was an exceptional act amongst the women of the warring countries. Anyone who was privileged to see the work and the sacrifice of the women of England, France and America, appreciates that such devotion was the usual thing.

The physicians and nurses connected with this hospital responded in large numbers to their country's call. Five physicians and seven nurses made the last sacrifice for the great cause.

I like to think that the training and the standards of this hospital were an inspiration to its children, and that the thought of it helped them to run straight even when death itself was the goal. Can we, who have been spared, allow an institution which has produced such offspring to fail to progress and develop, and then fall behind? That is what is happening and will continue unless there is a united effort immediately to provide her with the sinews of war.

The Board of Visiting Ladies have given this tablet to Helen Homans' memory. The work of Boston women at this hospital has for many years been conspicuous. They have given freely of their time, strength, and money. They have helped us to keep the human side of our work prominent, and their ideals have always been high for what this hospital should be. It is therefore fitting that a tablet should be erected in this room to one of their number.

I take this opportunity to pay my tribute to the wonderful courtesy, kindness, and hospitality shown the Americans by both English and French. In England the houses of the people were thrown open to our convalescent soldiers. Several thousands of our men upon leaving the hospitals went into British homes and stayed for a week or ten days before rejoining their organizations. This was allowed with some hesitation, but there were surprisingly few instances where difficulties ensued. Thousands of our men became better acquainted with their British brothers, and they in turn learned to know the Yankees.

In those trying days of October, 1918, when we in England were receiving into our hospitals the American wounded from Flanders, and at the same time transport after transport arrived from America with many cases of influenza and pneumonia, the Chief Surgeon had a conference with General Sir John Goodwin, Director General, R. A. M. C., as to the disposition of our sick and wounded when our own hospital capacity should be exceeded. General Goodwin's reply was, "While there is a bed in England it shall be at the disposal of the Americans." This was when the British casualties were coming into England at the rate of 3,000 to 4,000 daily, and ours at the rate of 300 to 400 daily. Our hospital capacity in England at that time was 15,000 beds, limited to that number, because we were not allowed additional medical personnel which was needed more desperately in France at the moment.

Our hospitals in England were visited by the King and Queen, and Princess Mary, and many distinguished citizens and high officers of the army and navy. Dances, theatrical performances, prize fights, and many other forms of amusement were arranged for our soldiers on leave in England, and there seemed no limit to what the British tried to do for us.

Americans living in England did much. Lady Harcourt ran a small hospital for us in Lancaster Gate, London. Mrs. Spender Clay conducted an Officers' Convalescent Home at Ford Manor, Lynnfield. Sir William and Lady Osler kept open house for American Medical Officers at Oxford. Those who partook of their delightful hospitality will never forget it. Sir William made American and British physicians know each other as they never would have done without him.

In France there was the same spirit. It is harder for a Frenchman than for an Englishman to take an American into his home, but it was done in thousands of instances. In Bordeaux many of us made firm friendships and delightful acquaintances. The appreciation of the French for what America was doing was great. This was more openly shown by the humble peasants. It was touching and embarrassing to those of us who thought we should be doing more, and that our help should have come much sooner.

I remember that upon the anniversary of the sailing of Rochambeau from Bordeaux, on his way to Newport, the school at Talence closed early and the children brought a basket of flowers decorated with French and American colors to the American Hospital in their midst.

We who have lived among them know the sincere and earnest desire of the British and French peoples to live in harmony and union with us, and with us to bear the burdens of this distressed world, and solve its mighty problems. When we think of this, and contemplate the sacrifice of the noblest and best youth of these nations, one is tempted to offer a prayer that the gift may have its complete reward; that having frustrated the foul designs of Germany, we may succeed in forming a Union of Nations which will endure and make war more and more difficult. Politics and obstinacy delay the making of a peace and the establishment of some form of a League of Nations. Can we look upon our dead and tolerate that such motives should stand between the civilized world and the consummation of its victory?

Helen Homans' life was one of service. The gift of this life to France was cheerfully and gladly made.

May this tablet commemorate these qualities of hers and be an inspiration to the coming generations of young men and women who shall use this library.

Original Articles.

INTESTINAL OBSTRUCTION.*

By E. A. Codman, M.D., Boston.

I feel it a great honor to be asked a second time to speak before this Academy, and only regret that I could not have been here on the first occasion. Besides the honor of being asked to address you, I find myself indebted to you for other things. In the first place, any medical society which asks me to address it, thereby puts itself, in a measure, on record as approving of the movement toward hospital standardization, even though, as in the present instance, my subject is a surgical one.

In the second place, this occasion has led me to read a paper by Fitz on "Intestinal Obstruction," published in the *Transactions of the Congress of American Physicians and Surgeons*, Volume 1, 1888. Many of us here studied under Fitz, but in our thoughtless student days I doubt if most of us realized what a privilege it was. We have all known of his original work on appendicitis and pancreatitis, but few probably realize that he also set the pace on acute intestinal obstruction. Osler accepts his work as a standard.

Fitz's paper was purely analytical—an academic work. There are few case reports and little mention of his own experience. He simply summarizes the recorded experience of his time. It is not original as is the appendicitis work, but forms a necessary step in the consolidation of the subject. Someone has to do such painstaking work before any surgical subject becomes an entity for us to discuss and teach. Before his time, cases of peritonitis were so much confused with mechanical obstruction, that his greatest difficulty seems to have been in weeding out peritonitis reports in order to get a series of known obstruction cases. Today, it is not even necessary to speak of peritonitis in discussing this subject, for we all think we know the difference at once, as far as pathology goes, although the differential diagnosis in the individual case still puzzles us. Think of it! He was able to collect only 295 cases, operated and unoperated, in a careful review of the English, French, and German literature for the preceding eight years. Today any single clinic could probably furnish a larger number; more difficulty would be found in obtaining a logical and energetic young man to make such a scholarly analysis of them. The work would be much more valuable, because these modern records are more careful, accurate and well preserved than the fragmentary records that were kept in hospitals in those days. After all, Fitz's paper is now out of date. It is scarcely instructive except as an example of inspiring energy. It is of as little practical use as the chart of an early explorer would be to the captain of an ocean liner. Yet there is nothing better to quote today. As far as I know, no such analytic paper has been written since, nor does there seem to be any inducement to young men to do such work. This is a cutting age.

I plead guilty myself. The paper which I have to give you is a mere talk on my personal experience, taking advantage of my position as a guest to rehearse to you stories of cases which would bore you individually. In fact, the third thing for which I have to thank you is for the self-satisfaction of finding that my own cases have done so well. The reason I chose the present subject was, that, at the moment your Secretary's invitation arrived, I had just operated on a most interesting case of obstruction. Later I looked up all my cases and found to my great surprise that the last 27 cases had all recovered—that is as far as the relief of the obstruction was concerned, although some died later from other causes. This is a contrast to the time of Fitz, when Senn in an able paper at the same symposium, gave the surgical mortality as about 69%, and it was still being debated whether medical or surgical treatment gave the best chance. The discussion following these papers of Fitz and Senn is interesting. The various distinguished authorities attending the congress evidently thought themselves very radical in setting two days as the proper time to continue medical treatment before sending for a surgeon. Fitz winds up his paper as follows: "Its treatment is surgical, on or after the third day, if the symptoms are urgent and forced injections fail to relieve." No wonder the surgeons of that time had a high mortality. Today we know that to save the patient the operation must be done before the third day. It is almost a rule that cases operated on before the third day recover, and those after the third day die. In my series there are but few exceptions to this. The duration of the condition is a far more important factor than the skill of the surgeon. Up to 1904 I had 14 cases with 11 deaths; since then 27 cases with no deaths. At first sight, I was much gratified to think how my skill had benefited by experience, but on closer analysis I saw that the real reason lay in the shorter duration of the symptoms prior to operation. In this field, as in most abdominal emergencies, it is the doctor who brings the surgeon to the patient within the first 24 hours who does the life saving. It would be interesting ground for discussion, as to how many hours the ordinary surgeon should wait for the extraordinary surgeon in such a case. I do not believe the difference between two surgeons is worth 12 hours, and as the time nears the fatal forty-eighth hour it goes faster and faster.

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*This paper was given before the Springfield Academy of Medicine on November 11, 1919, as an informal talk, and has since been written out for publication at the request of the Editor of the Boston Medical and Surgical Journal.

How tremendous, then, is the responsibility of the practitioner to detect, as early as possible, the first deciding symptoms which separate this critical condition from the ordinary belly-ache or attack of constipation. If the symptoms start with agonizing pain and collapse, as they often do in cases due to strangulation and obstruction to the blood supply of the gut, as in volvulus, intussusception and strangulated hernia, the diagnosis is easy; but when, as in the more common conditions of malignant strictures and bands of adhesions, the onset is only an exacerbation of symptoms to which the patient's intestines are already partially accustomed, how difficult is the task. It seems to me that we should make it a rule never to give a second cathartic or a second dose of morphine in a suspicious case, without consultation with a surgeon. I believe that any normal bowel will move satisfactorily in twelve hours, if six ounces of cotton-seed oil is put in the rectum, and three hours later an ounce of castor oil or other cathartic equivalent in potency, is given by mouth. At the end of twelve hours, if there has been no movement, a large suds enema will settle the question. It is unnecessary to repeat and waste further time. If the surgeon wants to try one more enema when he arrives, well and good. Do not give morphine until you have tried to move the bowels. If you do give morphine, don't repeat; if you have to, it is not an ordinary belly-ache.

Rectal examination must not be neglected in diagnosis. I do not mean instrumental, but digital examination. This procedure is so repulsive to both physician and patient, that it is readily passed by, like other disagreeable though essential things. It is all very well to have extensive knowledge of operative skill, but we must not underrate the simple, easy things. It is almost criminal to fail to make a rectal examination in any acute abdominal case before operation, and it is criminal where the suspicion of obstruction has arisen. By it we learn not only whether there is some actual palpable stricture or mechanical cause of stoppage, but the invaluable information of whether there are feces in the rectum or whether it is ballooned with gas. I have found that in real cases of obstruction the rectum is empty and the walls cling around one's finger, and there is a feeling above as if the whole abdomen was trying to crowd down into the pelvis. In other words, your finger tip feels the same intra-abdominal tension that your hand does on the outside of the abdomen. In appendicitis and other septic conditions the rectum is more apt to be ballooned with gas, for nature is on the defensive trying to wall off the pus, and to keep it out of the pelvis.

The books all mention fecal inpaction in the differential diagnosis. It seems to me time to stop doing this, for it leads to making the student think that fecal impaction is one of the common things, whereas in reality it is very rare. Feces do accumulate in the rectum and require digital removal, but I very rarely have seen any accumulation of feces above the rectum which was not readily dislodged by a single enema after the rectum had been cleared. I will not say that fecal impaction should not be considered in the diagnosis, but I do think it is of no practical importance after an enema or two. In fact, its existence is almost evidence of stricture of the intestine. Cases of cancer, for instance, in their early stages, cause no symptom except constipation, *i.e.*, fecal delay; then, alternating constipation and diarrhea, when putrefaction begins to soften the retained feces at intervals, so that they can pass through the stricture. Then the third stage, when the stricture is still tighter, the delay remains constant and a puddle of putrid feces stays above the stricture all the time. The gut above dilates and hypertrophies; semi-painful peristaltic rollers keep jets of fluid feces passing the narrows. This fluid may again partly absorb in the intestine below, so that partially formed movements deceive us as to the true condition. This sequence accounts for the great significance of constipation when it appears in elderly people of previously regular habit. Now that the x-ray is available we should seldom see the fourth stage, when the stricture becomes completely plugged.

The neglect of making a rectal examination once caused me more embarrassment than I ever have had from making one, although to insist on making these examinations in refined people is by no means unembarrassing. A case of obstruction was sent in to the hospital as an emergency and a tender tumor was found in the right groin. I examined the case rather hurriedly and considered it incarcerated omental hernia. At operation I found the tumor to be a mass of malignant glands, and on examining the rectum found cancer. The patient's physician, a very modest man, who had been present all the time, blandly remarked that it was for that condition that he referred the patient! Fortunately in this case no harm was done, but much as I believe in publicity in regard to safeguarding our profession, I should hesitate to analyze a series of cases of cancer of the rectum with regard to who was responsible for *not* making a rectal examination.

As to instrumental rectal examination, there are occasions when it should be employed, but as a rule in acute obstruction, the condition of patient and the time element render it of secondary importance. The same may be said of the x-ray. Where conditions justify its use it may give a detailed diagnosis, but the main diagnosis and time are the really important factors.

That it is possible for a practitioner to make early diagnoses I know, for Dr. F. S. Bulkeley of Ayer called me on three successive cases where the symptoms had existed less than 24 hours. All three recovered. That it is possible wholly to fail to recognize complete obstruction, I know from the following case of my own, which seems to me worth reporting in some detail. It made me realize the responsibility of the man who sees the case develop, and how difficult it is to appreciate that something is going wrong until it is too late.

The patient was a married woman of 31, the mother of two children. She complained of those vague abdominal symptoms which overworked, underfed multipari, with torn perineums, retroverted uteri and sagging intestines, so commonly tell us of. She made more than the usual complaint of "bloating something terrible." I removed a wholly obliterated appendix, excised a cyst the size of a walnut from each ovary, restored the uterus to its normal position by Webster's operation, and repaired the perineum. There was a varicocele of the pampiniform plexus and in putting a hemostat through the broad ligament to grasp the round ligament, I caused a considerable venous hemorrhage, so that in closing the wound, I felt it wise to leave two small cigarette drains to be removed in 24 hours, if no staining occurred.

The patient lived six days and we were not wise enough to operate again. The absence of classical signs of obstruction deceived us completely, and not until autopsy did I think of volvulus of the whole small intestine. This explained why there was no vomiting of any considerable quantity, and why the stomach tube persistently failed to get fluid from the stomach. No fluid could get up from the intestine into the stomach. Likewise it explained the persistence of small watery movements and practically no gas by rectum, for since there was nothing the matter with the large intestine, its fluid and mucus could come away by rectum. The twist was not tight enough to shut off the blood supply of the small intestine, and hence the signs of shock and septic absorption were absent. Even excessive distention was absent, because at the time the twist occurred the intestine was necessarily empty and there would be nothing to ferment to cause putrefaction. (I have long believed that there is in the intestine a self-regulating mechanism by which the blood supply can not only absorb gas from the intestine but can actually supply it to the intestine.)

The following notes were made after the autopsy eight years ago and seem to me instructive enough to be put on record: "Was called in afternoon after operation because Miss —— said that pulse was very bad and patient seemed in poor condition. I found it difficult to get pulse, especially in left wrist; but even in right it was hard to count and was small. Rate only 100, however. Nausea and vomiting and pallor. Looked like an extrauterine expression. Hands warm. I felt glad I had left in wicks because her condition was so much like hemorrhage. There was very little staining, however. She had a poor night but not much worse than many nervous women have the first night. Next morning I saw her again. She was unduly distended and tender in median part of abdomen. Not much staining and wicks were removed; only blood stained fluid followed them. Wound clean. From this time on, nausea and vomiting of very small amounts continued occasionally. In the afternoon I thought she was better but she did not look right. Tongue was moist practically up to the time of her death. Urine in fair amount after first 24 hours when she had to be catheterized. Leucocytes at one time 7,000, at another 9,000. Wound always drained too little for hemorrhage, and at one time after wick was removed there was a gush of clear serum. Movements were always liquid and unsatisfactory. Took practically nothing by mouth during the six days.'' I then made the following note. ''On the whole, severe distention with nothing in stomach (by tube)and very little gas by rectum, low leucocyte count, clear tongue, clean wound, high small pulse,—should have meant volvulus of small intestine and nothing but volvulus. *In the presence of distention and no gas or fluid by stomach tube, operate.*''

I made an examination through the wound after death and these are my notes: ''Abdomen distended, especially in median portion. Distention irregular as if composed of large coils crossing median line. Wound clean looking and wick not at all foul. No pus found in muscle layer. Wound enlarged upward and greatly distended coils of small intestine presented. These were withdrawn from pelvis and carried outside abdomen in search for a contracted coil. Pelvis easily emptied. No adhesions and very little blood-stained fluid in bottom of pelvis. No pus or fibrin.

When distended coils were outside of abdomen, and retracted upward, it could be seen that the rectum, sigmoid, cecum, and lower part of the ileum were contracted and empty. The contracted portion of the ileum disappeared upward toward the root of the mesentery. Holding the distended coils upward with my left hand, and passing my right hand upward along the contracted ileum, I came to a distinct twist in the region of the root of the mesentery. The intestines were then allowed to fall back and the wound enlarged upward to allow a better view. One of the distended coils was then picked up and followed upward (really downward), until the distended coil began to empty almost imperceptibly into the undistended one. This undid the twist which had not been tight enough to shut down the blood supply of its own pedicle. The distended coils were then emptied by passing a glass drinking tube from the lower part of the ileum upward (Monks), and the emptied intestine thus held out of the pelvis to allow examination of the other organs. With the exception of a little fluid in the transverse part of the duodenum, the stomach and duodenum were entirely empty and contracted, the stomach being so small it was almost hard to find it. The large intestine was entirely empty, except for a little gas and fluid in the cecum. The appendix stump was normal. The uterus was in ideal position and the ovaries, though a little soft and hemorrhagic, were not septic. The right broad ligament contained a small amount of diffuse hematoma, and the right tube was purplish with congestion. The distended coils of small intestine, although resembling those seen in the paralytic distention of general peritonitis, were shiney and not adherent with fibrin. No fibrin was seen at any time during the examination except over the spot where the round ligaments were sutured. Much of the small intestine occupied the region normally occupied by the stomach. These coils were especially distended and were probably proximal coils.''

This case was a great lesson to me and I want to make a text of it. I was deceived because the stoppage was up as well as down. Such cases, where practically the whole small intestine is shut off at both ends, are rare, but I am sure that we are deceived in other cases in the same manner. I have seen cases where the large intestine continued to have unsatisfactory movements when the obstruction was in the small gut, and, *vice versa*, I have repeatedly seen cases where the obstruction was low in the large gut, have no vomiting at all, because there was plenty of room above the stricture to accommodate the feces for many days. The last patient I operated on had such an obstruction for two weeks without much vomiting. So beware of waiting for a diagnosis until all the four classical symptoms of obstruction appear, namely,—pain, vomiting, constipation, and distention. In the early stages (the operable stages) any or all of these signs may be absent. The amount of pain will depend on the character of the cause, *e.g.*, in the final obstruction of a cancerous stricture it may be practically absent, while in a volvulus acute enough to shut off the blood supply, it is agonizing. Distention will not occur early if the gut was empty when the obstruction took place, or it may be diminished by excessive vomiting. As I have said, beware of small stools from the large intestine making you think that all the trouble is over. Remember that obstruction in the small intestine from a band or volvulus may obstruct upwards as well as downwards, and prevent fecal vomiting. Nor can you rely on visible peristalsis, for it is seldom seen unless there is chronic obstruction. Fecal vomiting should not guide you, for the time to make a diagnosis is before it occurs. In fact, it is easier to say what not to rely on than the reverse. To my mind palpation of the abdomen is fully as important as anything. I suspect obstruction in any abdomen which is convex in outline when the patient lies on his back. Normally even a pot-bellied man, after a good dinner, if he lies on his back without contracting his abdominal muscles, will have a flat surface on the top of the abdomen. If there is obstruction, the outline will be uniformly convex. If the distention is not too great, one always can feel vaguely the distended coils—more by the variation of the feeling of intra-abdominal tension than by actual feeling of the coils themselves. The feeling of the obstructed belly is almost as characteristic as the spasm sensation in an inflamed belly, and worth any two other symptoms to me. Finally, before leaving the subject of diagnosis, never forget that renal colic and pancreatitis notoriously beguile us into the diagnosis of obstruction.

But you can look up these diagnostic symptoms in the articles by countless authorities, and I take it that what you want of me is some account of my own experience and the exceptions rather than the rules. My authority comes from an experience of 41 cases which I have operated on myself, from a considerable number seen as assistant to the late Dr. Harrington, and from numerous others followed at the Massachusetts General Hospital, which were operated on by my colleagues. In all I think that I have had intimate experience with fully 100 cases, excluding strangulated hernias, vicious circles after gastroenterostomy, and cancers and strictures of the rectum, all of which are really forms of acute intestinal obstruction and help to paint the clinical picture in the mind. My 41 cases I present in tabular form, and will take up the lessons learned from the most interesting of them; some of them will tax your credulity—the first certainly will.

In 1899 I operated on a colleague in a small western hotel, for a procrastinated case of obstruction due to an antecedent attack of appendicitis. The thickened appendix itself was the obstructing cause, and lay across the ileum like a dense band of scar tissue. This was the interesting point of the case from a pathological point of view, but the curious coincidence connected with it was more interesting. This man told me on his death bed that, some years before, when practicing in an isolated mining town, he had had an attack of appendicitis. There was no way of being operated on, so he stayed in bed, took morphine enough to keep comfortable, and let the abscess form. A "cake" developed and when the acute pain and tenderness passed away, although the "cake" was still present, he got up and began to attend to his practice. One evening while rounding a street corner he ran into two men fighting with knives, and was struck by one of them in the side. On going home he found that the stab had opened his abscess! You may attribute this story to the morphine, if you like, but I believed it. There was this to establish it. Over the appendix there was the scar of a stab wound, and in a little pocket of granulations, connected to the base of the appendix by a sinus, was a large, hard, calcareous appendolith.

Case 2 was the next case of interest. An abortion had been attempted with a rubber penholder some months previously. The penholder had not reappeared although it had done its work. An x-ray showed it. At operation it was found encapsulated among the intestines in the median line. There was no pus about it, and the sinus it left after removal was so firm and cicatricial that it felt stiff, as if the object was still there. I closed the little hole in the capsule which I had made to take out the penholder, with a single stitch, and then closed the abdomen without drainage. Everything went well until the patient was on the point of going home, when intense abdominal pain, vomiting, and distention set in. I procrastinated, and when I did operate, found the whole of the small intestine chocolate-colored, and even after the release of a band at the former site of the foreign body, the color did not fully return to the gut. Evidently the contracture of the sinus, formerly held rigid by the penholder itself, produced a strangulation of the gut or of its mesentery. I do not know whether this was a case of mesenteric thrombosis or of obstruction from a band. I think the former; perhaps both. I hardly know how to have prevented this, but I certainly should have operated sooner for the secondary condition.

(To be continued.)

SUPPORTING THE PELVIC FLOOR TO PREVENT AND OVERCOME UTERINE PROLAPSE.

By De Witt G. Wilcox, M.D., F.A.C.S., Boston,

Professor of Surgical Gynecology, Boston University.

When a mother who has borne her quota of children passes the menopause and reaches comfortable middle life, she should by all rules of the game, be exempt from further pelvic discomfort. Unfortunately such is not always her lot, for there lies in wait for her that old time enemy, which seems not to have been young even in Caesar's time, "Falling of the Womb."

Permit me for a few minutes to direct your attention to the two phases of uterine or pelvic prolapse;

First, the so-called "falling of the womb," which comes on after middle life and which varies in degree from a slight prolapse to complete procidentia.

Second; the prolapse of the pelvic *floor* which follows the removal, either partial or complete, of the uterus, from whatsoever cause.

There are two types of women in whom uterine prolapse is exceedingly common, indeed it can be safely said that 75% of these types will have the lesion to a greater or less degree. First; those women of middle age or beyond, who have borne many children in rapid succession, who have had brief lying-in periods, who have borne the brunt of the family support, who have carried heavy weights, scrubbed floors, ironed, cooked and been upon their feet from 16 to 18 hours a day all their married life. If added to their burdens, they have suffered unrepaired perineal lacerations, the wonder is not that they so generally suffer from this distressing condition, but rather that any escape.

The second type are those who have had many or possibly only a *few* children, but whose circumstances have enabled them to have better parturient care; as they have grown older, however, and the family cares have decreased, and the comforts of living increased, they have become inactive, indolent, overfed, and eventually obese. This woman while she has a horror of getting fat is doing everything she can to increase her waist line, so she does the next worse thing, which is to tighten her corset lacings, in the hope that she may render her abdominal obesity less apparent.

Like the old saying, "what goes up must come down," it is equally true that if the abdominal and pelvic cavities are so compressed that there is not room for the organs which nature placed therein, they must of necessity come out. As intra-abdominal pressure is increased there is but one direction for the displaced organs to go, and that is downward. Hence these women ultimately develop uterine prolapse. For why should they not? It would require something more durable than normal ligaments to withstand such pressure.

These two types are the women who most frequently have uterine prolapse. Occasionally however, we find this condition in women who have borne but one or two children, and not infrequently do we find it in those who have borne no children at all, or ever married.

Permit me for a moment to refresh your memories on the means which nature has employed to support the uterus, and thereby prevent just such occurrences as uterine prolapse. Her ligaments are eight in number, three double sets, and two single. Each set has its own particular function to perform.

The round ligaments are designed especially to keep the uterus from falling backward. The broad ligaments maintain the uterus in the median line and steady it during gestation. The sacro-uterine ligaments are essential in supporting the pelvic floor and thereby prevent the uterus from taking the first steps in a prolapse. The function of these sacro-uterine ligaments are too frequently overlooked.

The picture which I exhibit will show you how the pelvic floor is made up and how it becomes possible for it to give way sufficiently to allow a uterine prolapse to occur.

By a little study it can be seen that a mere relaxing or giving way of the round and broad ligaments is not sufficient to allow a uterine prolapse to occur. There must first be a giving way on the part of the levator ani and sacro-uterine ligaments, before the uterus can begin to descend. The mere stretching of the broad and round ligaments would not cause a uterine prolapse. These ligaments are expected to stretch, else gestation could not proceed.

In detailing the treatment of this condition, I shall consider but one type of prolapse, and that the exaggerated type, generally called procidentia uteri, and but one class of patients, namely the woman who has passed the child-bearing period, or is approaching it.

Let us assume that this woman has had all the conservative treatments usually given such cases; tampons, pesseries, exercise, reduction of weight, postural treatments. Let us assume that she has had even more than conservative treatment, that she has had her lacerations skilfully repaired, that she has had her round ligaments shortened by any one of the dozen methods which are usually employed but which as frequently fail of permanent relief. That she has had a uterine suspension or a fixation or a Gilliam, Ferguson, *ad infinitum*, and yet she has her prolapse, because the essential element in the cause of the prolapse has been overlooked; namely the overstretched pelvic floor.

The great variety of operations proposed for the relief of this obstinate condition show how futile the majority of them are. I have gone through the gamut of them all, and while many of them will do fairly well for the mild cases, nearly all are eventual failures for the exaggerated type. Not until I employed the method I am about to describe have I been entirely and altogether satisfied with the end results obtained.

To attempt to support the pelvic floor by drawing up the uterus and fastening it by any device is like lifting a man by the hair of his head to keep him in the upright position, when his feet do not touch the ground. It is all right, so long as the hair holds out, but he would be much more comfortable to have something substantial under his feet, and thereby maintain his own position.

So in drawing up the uterus to support the pelvic floor, one is beginning at the wrong end.

The method I have been employing for the past four years is, first to make all necessary perineal repairs, paying special attention to the levator ani, then open the abdomen and remove the uterus at the level of the internal os.

In the majority of these cases the uterus is large, subinvoluted or fibrous, and in consequence over weighted; it is also very prone to a retro-displacement. Please bear in mind that I am now referring to such patients as have passed or are closely approaching the menopause, hence this abnormal uterus better be out. The sub total hysterectomy is made in the usual manner and the tubes and ovaries included in the removal.

The round and broad ligaments are tied separately; the ends of the ligatures left long and secured with hemostats; next the uterine arteries are secured, and lastly, particular care is taken to identify and secure the uterine ends of the sacro-uterine ligaments, as these are quite essential to the support of the pelvic floor, provided they have been severed in the amputation of the uterus.

After the uterus has been amputated at the level of the internal os, the stump of the cervix is pulled upward by bullet forceps, and four iodized or chromized cat gut sutures, number 2 or 3, are passed transversly and equi-distantly through the stump of the cervix, the ends of these sutures are secured with hemostats, and laid out in the order of their insertion.

The two ends of the severed broad ligaments are then drawn across the stump of the cervix and tied so that their severed ends approximate. The same thing is done with the ends of the round and sacro-uterine ligaments, or all six ligaments may be brought together, and tied with one ligature.

We now have all the pelvic supports which nature has provided for keeping the pelvic floor form sagging down, securely anchored at a point where they will be of greatest service. The four sutures which have been inserted through the stump of the cervix are now tied one by one. The tying of these sutures securely implants the three sets of ligaments into the stump of the cervix. This implantation accomplishes another end, in that it obliterates all raw stumps and surfaces.

There is usually a small exposed surface where the peritoneum has been dissected from the anterior surfaces of the uterus and bladder. This fold of peritoneum is picked up and stitched over the stump.

This is the method I have been using almost exclusively for the past four years, in overcoming uterine prolapse, and in preventing pelvic prolapse from occurring after hysterectomy. The results are so gratifying that I see little reason for changing it. The mortality, morbidity and end results, I shall speak of later.

What led me to adopt this method of operating on uterine prolapse, was an effort to prevent an oft occurring, undesirable end result of panhysterectomy, namely a sagging down or complete prolapse of the pelvic floor, occurring some months or years after a hysterectomy had been performed.

But few of our text books or operators lay any stress upon the necessity of supporting the pelvic floor after such an operation. After being convinced that the method as outlined did effectually prevent pelvic prolapse, following a hysterectomy, I adopted it for the cure of procidentia. The method is equally applicable in those cases where the *cervix* has been removed, with the uterus, a pan-hysterectomy. In such cases, the six ligaments can be inserted into the vaginal vault, after the same manner as inserting them into the stump of the cervix.

As to the statistics: Since adopting this method, I have operated upon 156 women in the manner just described; 63 have been pan-hysterectomies, without a single death; 93 have been sub total hysterectomies, with but one death, making a mortality of .7 of 1%.

The average time that these patients have remained in bed, has been 14 days, average time in the hospital, 20 days.

End Results: So far as I have been able to trace the patients, I have found but two patients who show any evidence of a prolapse. In such cases the failure has probably been due to the supporting ligaments pulling out from the cervical stump before healing.

In consulting so recent a publication as Johnson's Operative Therapeutics, I find the mortality given in that work for a period extending from 1913 to 1916, 428 cases of supra-vaginal or subtotal hystrectomy, with a mortality of 4.2%. Out of a total of 113 pan-hysterectomies, the mortality was 11, making a mortality for both methods of 7.5% which is more than 10 times the mortality resulting from the method described.

While this method requires a little more time than is required to remove a uterus, without thus implanting all the six ligaments, yet it need not be a prolonged operation. My average time for the last 56 cases was 50 minutes.

Clinical Department.

LOSS OF BOTH EYES FROM THE EXOPHTHALMOS OF HYPERTHYROIDISM.

By Frank H. Lahey, M.D., Boston.

The following case is cited as an illustration of the extent to which the exophthalmos of hyperthyroidism may progress.

Mrs. K., Hosp. No. 362034, was admitted to the Ophthalmological Service of the Boston City Hospital on October 19, 1917, with a past history of admission as an out-patient to another hospital on November 21, 1916, where she had been treated for hyperthyroidism by means of x-rays. She had received the x-ray on December 22, 1916, January 11, January 31, March 8, March 29, April 21, May 12, and June 2, 1917. She stated that following x-ray treatment, her pulse came down, she gained in weight, and her general condition improved, but that her exophthalmos continued to progress until oedema and ulceration of her right cornea was such that she came to the Boston City Hospital, was admitted to the Ophthalmological Service, and enucleation of the eye was done by that service. On November 16, I was asked to see her on account of increasing exophthalmos and oedema of the left eye, and it was decided to attempt by surgical measures to preserve her remaining eye.

Because of the belief that recession of the protruding eye occurs after removal of the sympathetic ganglion on the affected side, the operation of removal of the superior cervical sympathetic ganglion was carried out, without difficulty, and at the same time the external canthus was incised to relieve the pressure of the lid edges. Progress of the oedema continued in spite of these procedures, whereupon two days later the lids were sutured together by the Ophthalmological Service, and still oedema and ulceration continued until enucleation of the remaining eye became necessary, and was carried out by the Ophthalmological Service on December 26, 1917.

On my return to practice this year, I had this patient interviewed at her home, with the following report:

Blind, but cheerful. Pulse 128. No visible or palpable thyroid enlargement. Well-marked tremor. No loss or gain in weight. Appetite normal. Dyspnoea on exertion, but no worse than before operation. Thinks that she is rather more nervous than before operation. Her husband states that she is steadily improving, but "she moves her fingers constantly."

This condition is one of the rare complications of hyperthyroidism, and certainly a most distressing one. Were such a case to occur again, I would certainly employ removal of the sympathetic ganglia, and at a much earlier stage of the disease; furthermore, while I am sure that x-ray treatment in no way caused the condition, I would employ surgical removal of a considerable portion of the gland, rather than x-ray treatment, as the relief from hyperthyroidism (of which the exophthalmos is a part) is more complete and immediate after the surgical procedure than that which follows x-ray treatment.

Medical Progress.

A RÉSUMÉ OF THE LITERATURE OF INFANTILE SCURVY DURING THE PAST TWO YEARS

By John Lovett Morse, A.M., M.D., Boston.

In a paper published in the Boston Medical and Surgical Journal in January, 1918, Vol. 178, page 160, the writer summed up the literature regarding infantile scurvy for the previous five years. Much work has been done and much has been written regarding this subject since that time in the literature of the Allies. Presumably there has also been a considerable amount written on it in the literature of the Central Powers. This material is not, as yet, available, however, and has, therefore, not been considered.

Early in 1918, McCollum,[1] in an article in the *Journal of the American Medical Association*, summed up and restated his views regarding the etiology of scurvy, *viz.*, that it is not due to the lack of an antiscorbutic substance in the food, but to the absorption of the abnormal decomposition products of proteins. He attributes scurvy in guinea pigs to stagnation of the feces in the cecum and the absorption of the toxic products of the abnormal decomposition of the food resulting from it. He cites the results of the laxative treatment of scurvy in these animals and believes that because rats do not develop scurvy on a diet which produces scurvy in guinea pigs, it is proven that scurvy is not due to the lack of an antiscorbutic element in the food. He says that if scurvy was due to such a lack, it must be assumed that the guinea pig requires some chemical complex in the food which the rat does not. He thinks that this is not reasonable, because the experimental evidence points to the conclusion that the chemical requirements of one species of the higher animals are the same as those of another. He finally says that "whoever would seek to establish the validity of the existence of a specific antiscorbutic substance should first furnish new explanations for the experimental results that are not in harmony with the antiscorbutic theory, rather than present new experiments that harmonize with this most attractive hypothesis."

Jackson[2] has endeavored to corroborate her former work in connection with Moore as to the action of microörganisms in the etiology of scurvy. She found microörganisms in the bones of two babies with rickets that died of other diseases and also in those of a baby dead three hours after birth. In the writer's opinion, however, there is no evidence to show that the cocci which were found had anything to do with the diseases or with the bones, except as late and secondary invaders.

She also describes a similar condition in five puppies. These lesions seem to the writer rachitic rather than scorbutic and, as in the case of the babies, there is nothing to show that the organisms were more than secondary invaders. She finally describes hemorrhages in the bones of a guinea pig, which she believes to be scorbutic. She did not find, however, any cocci. In summing up she says "while we cannot as yet state positively that the lesions described are due directly to the action of the micrococci so frequently found in connection with the lesions, and particularly the fresh ones, the presence of cocci appears at least significant. Even should we subsequently decide that these organisms are but secondary invaders it still seems that the evidence presented by microscopic preparations of the lesions argues for the presence of some infectious agent, and emphasizes the need of further work on the bacteriology of these conditions."

Harden and Zilva[3] criticise McCollum and Pitz and believe that their conclusions are unwarranted, because they gave their experimental animals whole milk freely. They state that it is well known that if enough milk is taken scurvy does not develop, and, as the amounts of milk which the animals took were not noted, the results of McCollum and Pitz are, therefore, unreliable. The improvement in the animals was probably due, in their opinion, to the milk which they took. They also say that "as long as these observers (McCollum and Pitz), continue to employ their present technique, we consider that their results are open to criticism."

Cohen and Mendel[4] carried out a very careful and complete investigation with regard to the relation of constipation to scurvy in guinea pigs. In more than 100 autopsies on normal guinea pigs or on guinea pigs dead from other conditions than scurvy they never observed one in which the cecum was not full or partly full of semifluid feces. The cecum varied widely in appearance and in the character of its contents in scorbutic animals. They found impaction of feces in the cecum about one-quarter of nearly 100 guinea pigs dead of scurvy. They found visible damage to the intestinal wall in about one-half. They call attention to the fact that milk is an extremely constipating diet for guinea pigs and that too much milk may cause death from constipation. They found that guinea pigs developed scurvy on small amounts of milk, but got over the scurvy when they took larger amounts, proving that constipation was not the cause of the scurvy. Adding roughage to the diet did not prevent scurvy, even when the bowels were kept well open. Givens and Cohen[12] call attention to the fact that small amounts of cabbage which, when fresh, prevent scurvy, have no action after being dried, although they contain the same amount of roughage. Cohen and Mendel conclude, therefore, that the simultaneous exhibition of constipation and a certain symptom complex with a given diet is no *prima facie* evidence that constipation is responsible for the appearance of the symptom complex. They may well be intercurrent conditions. They call attention to the fact that Pitz' guinea pigs were given milk *ad libitum*, and further call attention to the fact that scurvy also develops in guinea pigs on markedly laxative diets.

Hess and Unger[5] also call attention to the fact that macroscopic lesions do not justify the diagnosis of scurvy in guinea pigs, because the macroscopic lesions in scurvy and rickets may be very similar. Microscopic examinations must be done before authoritative statements can be made. On this account the work of McCollom and his school, as well as that of those who criticise it, are open to a certain amount of question. Hess and Unger[5] found that cod liver oil prevented constipation in guinea pigs but did not prevent scurvy. They also gave liquid petrolatum to a large number of guinea pigs and kept the bowels loose, but scurvy developed just the same.

Rappleye[6] fed guinea pigs on a diet of oats and milk. The amount of milk which they took is not stated, however, and no microscopic examinations were made. The guinea pigs developed scurvy and their ceca were distended with pale pasty feces. They were improved, but not cured, when phenolphthalein was given. Guinea pigs which were fed on oats and hay also developed scurvy. In them, however, the appearance of the intestines was nearly normal. Putrefaction was less marked and the stools were not abnormal. Laxatives, however, helped these animals also. He concludes, therefore, that it is evident that scurvy in guinea pigs is not due to the impaction of feces and its results as McCollum claimed. Blood cultures made from animals dying or killed during the study were universally sterile. His results, of course, as far as they go, disprove the suppositions of Jackson.

Chick, Hume and Skelton[7] also criticise the conclusions of McCollom and Pitz in that they paid no attention to the amount of milk taken in drawing their conclusions that scurvy was not a deficiency disease, but due to toxemia from constipation. Chick and her coworkers show that those of their animals which survived took much more milk and but little grain and that those that did not, took much grain and little milk. They say that all guinea pigs with scurvy are constipated, no matter what the diet. They say that the improvement which was supposed by McCollom and Pitz to have followed as the result of giving laxatives might just as well have been due to the taking of more milk. Chick and her coworkers gave considerable amounts of dried vegetables, which had been well cooked in water in order to restore their bulk. They did not prevent scurvy, showing that when scurvy develops on a diet of dried vegetables, it is not the lack of bulk in the dried vegetables which by causing constipation is the cause of scurvy. Further experiments with liquid paraffin showed that when this was given with the usual diet it did not prevent scurvy, and that when it was added to the diet after the development of scurvy it did not influence its course.

Hess[8] states that the observation of many cases of infantile scurvy has convinced him that constipation plays no essential rôle in the etiology of this disease. Furthermore, potato, which cures 'scurvy, is not a laxative, and the malt soup preparations, which most readily lead to this disorder, are laxative. Infantile scurvy is not relieved by petrolatum, while it is cured by amounts of orange juice so small that they have no laxative action. Furthermore, he found that the "artificial orange juice" which McCollom found effective in scurvy in guinea pigs was ineffective in infantile scurvy. Hess and Unger[9] also found that orange juice given intravenously was as effective in the cure of infantile scurvy as when given by the mouth. Given in this way, orange juice can, of course, have no laxative action.

Pitz,[10] taking his cue from Hull and Rettger[11] who showed that in white rats and men the bacterial flora of the intestine could be changed from a putrefactive to an acidophilus flora by the addition of lactose to the diet, argued that, on the basis that scurvy in guinea pigs is due to stagnation of feces in the cecum with putrefaction and absorption of the products, any substance which will improve or change the intestinal flora from a putrefactive to an acidophilus type, should prevent scurvy. He, therefore, fed guinea pigs on oatmeal and whole milk to which he added a carbohydrate. He believes that he was able both to cure and prevent scurvy in guinea pigs by the addition of lactose to the diet. Dextrin, sucrose and starch had some protective action, but dextrose very little. All of them had much less action than lactose. His conclusions are open to criticism, however, because whole milk was given to the guinea pigs *ad libitum* and no data are given as to the amounts which they took.

Cohen and Mendel[4] found that the addition of pure lactose to the food given to guinea pigs neither prevented the development of scurvy nor cured it after it had developed. They call attention to the facts that Pitz' lactose may not have been pure and that he gave milk to the guinea pigs *ad libitum*.

Harden and Zilva[3] also criticise Pitz' results because he gave his guinea pigs raw milk freely. They had previously tested cane sugar, fructose and a syrup, and found that they had no antiscorbutic value. They then tested lactose and found that in doses of from 3 grams to 6 grams daily it did not afford any protection against scurvy in guinea pigs. They, therefore, believe that Pitz' results were due to raw milk rather than sugar. Harden and Zilva[13] also showed that the antiscorbutic value of orange juice and lemon juice is not in the part made up of citric and other acids, nor connected with either sodium or potassium, as McCollom and Pitz supposed.

Hess[8] writes that "unless the diet of man includes food possessing the antiscorbutic property, scurvy will develop in due course of time. From this point of view, scurvy must be regarded as a deficiency disease. If, however, we would limit this term to diseases brought about by a deficiency of a definite chemical or biologic substance, then we are not at the present time warranted in thus classifying it. Nor is it necessarily true that scurvy is directly brought about by a lack of this accessory food factor. It is quite probable, ..., that the lack of this factor leads rather to the development of substances which in themselves occasion the symptoms of the disease." Hess and Unger[5] state that the addition of hard boiled egg and cod liver oil to the diet of guinea pigs did not prevent scurvy, that is, scurvy developed on a diet containing the "fat-soluble A." Furthermore, a diet of hay or straw with oats and water causes scurvy in guinea pigs, although this diet contains a sufficient amount of the water-soluble vitamins. Cohen and Mendel[4] found that the addition of neither yeast nor butter to a diet causing scurvy in guinea pigs prevented its development, showing that neither the fat-soluble nor the water-soluble vitamins are the primary factors concerned in the scurvy of the guinea pig.

Gerstenberger[14] in a long theoretical article "imagines" that scurvy may be due to a partial defunctioning of calcium and its physiological anion as the result of a break in the metabolism of carbohydrates from the absence or inactivity of some physiochemical substance or "vitamin" essential to normal carbohydrate metabolism. The defunctioning substance produced as the result of the break in the metabolism of the carbohydrates may possibly be oxalic acid or some other agent having a similarly strong affinity for calcium. He then proceeds to defend his imaginings and to endeavor to prove them from the literature. His efforts do not, however, seem to the writer very successful.

Pitz[15] was inspired by Gerstenberger's article to make some experiments as to the influence of meats and various salts upon the development of scurvy. He made no microscopic examinations, however, and gave his guinea pigs raw milk *ad* *libitum.* He found that the addition of meat or casein to the diet would prevent scurvy for a number of weeks and greatly prolong the life of the animals. The addition of tricalcium phosphate to the protein increased the protection and the addition of sodium chloride still further increased it. Experiments with the various forms of calcium and of phosphorus then showed that the calcium was more important than the phosphorus, and that the best combination was tricalcium phosphate. He explains the action of the calcium as follows: Calcium controls the permeability of various animal tissues and thereby affords protection against invading agents. He thus fits in his new data with his old theories.

Chick, Hume and Skelton[7] found that from 30 c.c. to 50 c.c. of fresh cow's milk daily did not prevent the development of scurvy in guinea pigs on a diet causing scurvy. They found that exactly 50 c.c. daily afforded some degree of protection, that from 50 c.c. to 85 c.c. daily increased the protection and that from 100 c.c. to 150 c.c. daily afforded complete protection. They conclude, therefore, that it is the quantity of milk which counts. They believe that fresh cow's milk contains an antiscorbutic accessory substance, but only in small amounts. Milk to protect, therefore, must make up the whole or almost the whole of the diet. This is usually the case with young animals. The antiscorbutic value of fresh milk is, therefore, very low. Their results as to the small amount of antiscorbutic substance in fresh milk have been generally accepted. Hess and Unger[9] estimate that an infant needs at least one pint of raw milk daily to protect it against the development of scurvy.

Barnes and Hume[16] have made a comparative study of the antiscorbutic properties of both heated and dried cow's milk. They found that from 100 c.c. to 150 c.c. of raw milk is required daily to prevent scurvy in guinea pigs on a basal diet. These amounts of dried milk always failed to prevent the development of the disease; 125 c.c. to 175 c.c. of raw milk daily were required to prevent scurvy in monkeys, while 250 c.c. to 300 c.c. of dried milk daily were necessary certainly to prevent the development of scurvy in these animals. A monkey acquired scurvy on 175 c.c. of dried milk daily and was cured completely on 175 c.c. of fresh milk. Scalded milk, that is milk brought rapidly to a boil in a saucepan over a gas burner, and then immediately set to cool, had more antiscorbutic value; 200 c.c. daily of scalded milk quickly cured scurvy in a monkey which had been taking 200 c.c. and later 300 c.c. of dried milk. Certain experiments which they made seemed to show that the antiscorbutic value of cow's milk varies with the feeding of the cows. Winter milk is inferior to summer milk. Chick, Hume and Skelton[7] also found that in guinea pigs dried milk had less protective power than fresh milk. They say that any method of preparation which tends to diminish the small amount of antiscorbutic element in fresh cow's milk must be regarded with suspicion when feeding infants. Hess and Unger,[9] using a milk dried at 116° C. for one minute, found that an amount equal to 80 c.c. of fresh milk cured scurvy in a guinea pig. Two babies with scurvy also improved when given this dried milk.

The curative value of lemon juice and orange juice, both in experimental and human scurvy, is universally accepted. The "artificial orange juice" prepared by McCollom and which he found effective in guinea pigs has been found by Hess[8] to be ineffective in both guinea pigs and infants. Harden and Zilva[13] fractioned lemon juice and found that the best part, if not the whole, of the antiscorbutic content of lemons is in the part not made up of citric and other organic acids. They found that the potency of their "treated" lemon juice diminished with time and that the subcutaneous injection of treated lemon juice did not cure scurvy. Neither did the administration of very concentrated doses of "treated" lemon juice prevent or delay the onset of scurvy in guinea pigs when they were put on a diet lacking the antiscorbutic factor.

Harden, Zilva and Still[17] believe that the main part, if not the entire antiscorbutic potency of the lemon juice, is contained in the residue which is left after the removal of the free citric and other acids. This residue is slightly acid to litmus but can be made neutral without vitiating its potency. It can be concentrated to any desired volume, or even evaporated to dryness without losing its potency. They think that this fact may be of advantage in that intestinal disturbances and diarrhea may be avoided by its use. They were able in this way to give the equivalent of from 6 to 12 lemons daily without disturbing the digestion or causing diarrhea. They feel, therefore, that with this preparation quicker results may be obtained than with plain lemon juice. Hess and Unger[18] found that ageing and heating had practically no effect on the antiscorbutic power of orange juice. They were able to extract the active factor of orange juice with alcohol and retain the power of the orange juice. The residue was inert. They also found that orange peel retains some of its antiscorbutic power after drying for three months.

Harden and Zilva[19] and Harden[20] found that the neutralization of orange juice did not destroy its antiscorbutic power. When, however, orange juice was made N/20 alkaline with NaOH and stored for twenty-four hours in a cold room, amounts which protected guinea pigs when untreated did not prevent or delay the onset of scurvy. They proved that this defect was not due to the effect of the alkali on the animals, because when N/20 alkaline orange juice, after having been stored for twenty-four hours, was made N/20 acid with HCl before being given to the animals, the effect still persisted. An alkalinity of N/50 with NaOH destroyed all but a trace of the antiscorbutic activity.

Givens and McClugage[21] used two preparations of dried orange juice. One was dried instantaneously in the same way as milk is dried to form milk powder, the other was dried slowly for 50 hours. An equivalent of 3 c.c. of fresh orange juice of the rapidly prepared preparation prevented the development of scurvy in guinea pigs. The same dosage also cured them after scurvy had developed; 12.5 c.c. of the other preparation was necessary to prevent or cure scurvy in guinea pigs. Neither preparation was injured by ageing for three months.

Hess and Unger[9] were able to cure scurvy in infants by the use of orange juice intravenously. The strained orange juice was boiled for five minutes and just before being injected was rendered neutral, or slightly alkaline, by the addition of normal sodium hydroxid. They used as much as 30 c.c. for an injection. The orange juice used in this way was as effective as when it was given by the mouth.

Chick, Hume and Skelton[22] found that preserved lime juice was useless for the prevention of scurvy in guinea pigs and monkeys. They found that, volume for volume, fresh lemon juice was four times as potent in the prevention of scurvy as fresh lime juice. In one instance, the scurvy which had developed on lime juice was cured by the same amount of lemon juice. They explain the favorable results which have been reported from the use of lime juice in the past to the fact that lemons were used instead of limes, the two having been confused in the past. Stefánsson[30] found that bottled lime juice neither prevented nor cured scurvy among his men.

Chick and Rhodes[23] investigated the antiscorbutic value of the raw juices of root vegetables, using guinea pigs on a basal diet. The juices were prepared by rubbing the clean cut surfaces of vegetables on a kitchen grater, placing the pulp in muslin and squeezing gently between the fingers. The juices were prepared fresh daily. They changed rapidly at room temperature and deteriorated in antiscorbutic value even when kept in the refrigerator at low temperatures. They found that the juice of raw swede was easily first in antiscorbutic value; 2.5 c.c. daily protected the guinea pigs from scurvy. Guinea pigs receiving from 5 c.c. to 10 c.c. of raw carrot juice daily developed severe scurvy, while those receiving 20 c.c. daily were protected; 20 c.c. of beet juice daily afforded no protection. They state that the value of raw swede juice is not markedly inferior to that of orange juice and that it is a satisfactory substitute for it. The value of raw swede juice is ten times that of carrot juice and more than ten times that of beet juice. Incidentally they found that 1.5 c.c. of fresh orange juice protected 50% of guinea pigs against scurvy, while 3 c.c. of fresh orange juice protected all the pigs against scurvy.

Delf[24] proved that 1.5 grams of raw cabbage added to the basal diet of guinea pigs prevented scurvy and that 0.5 grams daily did not. Chick and Rhodes[20] found that 0.5 grams of raw cabbage leaves protected a little and that 1.5 grams of raw cabbage leaves protected entirely. Givens and Cohen[12] found that raw cabbage prevents and cures scurvy. Campbell and Chick[25] found that 5 grams of canned cabbage daily did not protect guinea pigs against scurvy, while 7.5 grams of canned cabbage daily prevented scurvy entirely. The loss of antiscorbutic value during canning was, therefore, about 70%. Givens and Cohen[12] found that cabbage dried at low temperature retained some, but not all, of its antiscorbutic qualities. So also did Givens and McClugage.[26] When dried at high temperatures and when cooked and dried, cabbage lost all of its antiscorbutic properties. Cohen and

Mendel[4] found that dried cabbage in amounts of from one to three grams daily apparently had a definite antiscorbutic action. Hess and Unger,[18] as well as many others, have found that fresh carrots are strongly antiscorbutic. They found, however, that carrots dried in three different ways were all inert.

Although Hess has shown that boiled potatoes have a strong antiscorbutic action in babies, Givens and Cohen[12] found experimentally that potatoes when boiled and dried lost all of their antiscorbutic power. Stefánsson[30] found that desiccated potatoes neither prevented nor cured scurvy.

Campbell and Chick[25] found that 5 grams daily was the minimum amount of raw beans which would prevent scurvy. After canning, 20 grams did not prevent the development of severe scurvy. That is, the loss of antiscurvy value was between 75% and 90%. They conclude from their experiments with beans and cabbage that the value of canned vegetables as regards antiscurvy properties must be regarded as negligible.

Hess and Unger[9] strained canned tomatoes through a colander, warmed them and fed them to babies through a nursing bottle, giving one ounce daily to infants a few months old. In some instances they gave as much as 8 ounces daily without causing any disturbance. In no instance did they have either intestinal or nutritional disturbances from the tomatoes. These, they say, ought not to be expected, as the acidity of tomatoes is only one-half of that of orange juice. They gave the tomatoes to a large number of infants in an institution for nearly a year and found that it was as effective in the prevention of scurvy as orange juice. Ageing one year did not impair its value. Stefánsson[30] found that canned tomatoes neither prevented nor cured scurvy among his men. Givens and McClugage[26] found that tomatoes dried under certain conditions retained some of their antiscorbutic properties.

Hess and Unger[9, 18] found that prune juice has no antiscorbutic action either in babies or guinea pigs.

Hess and Unger[9] found that bananas were ineffective in two cases of scurvy, while Chick and Rhodes[23] found that green Spanish grapes had very little antiscorbutic value, even when given in considerable amounts. Cohen and Mendel[4] found that both germinating oats and barley prevented the development of scurvy in guinea pigs.

Harden and Zilva[27] have shown by their experiments on monkeys that the antineuritic and antiscorbutic elements are independent. They produced scurvy in a monkey on an ample diet in which the antineuritic element was present, but in which there was no antiscorbutic element. They also produced scurvy in a monkey on an ample diet containing neither the antineuritic nor the antiscorbutic element. Finally they produced scurvy in a monkey on an ample diet containing the antineuritic element but no antiscorbutic element and then cured it quickly by giving their "treated" orange juice.

Hess and Unger[28] call attention to the fact that the alkalization of orange juice destroys its power to protect guinea pigs against scurvy. It is evident, therefore, they say, that the antiscorbutic vitamin is peculiarly sensitive to alkalization. It would seem to be, therefore, not immaterial as to whether the foods of infants are alkaline or not. They have found that milk formulas containing malt soup have an exceptional tendency to bring about scurvy in infants. This action might be due, they say, to a number of conditions. (1) An insufficient amount of milk; (2) pasteurization, boiling or both; (3) ageing of the milk; (4) the alkali in the malt soup; (5) the large amount of carbohydrate in the food. In order to determine which of these possibilities was the cause, they gave to a baby which had developed scurvy on a malt soup mixture a pint of milk with sucrose and the same amount of potassium carbonate as was in the malt soup instead of flour and malt soup. The milk was boiled five minutes. The scurvy remained the same. They then gave the same mixture of milk and sucrose, boiled as before, but without the potassium carbonate. The scurvy was immediately cured. The alkali, therefore, evidently rendered the antiscorbutic factor in the pint of milk insufficient. They then experimented with guinea pigs and found that when potassium carbonate was added to the amount of milk ordinarily sufficient to prevent the development of scurvy in guinea pigs, scurvy developed. The scurvy was then cured by the administration of orange juice, although the alkali was still added to the food. It is evident, therefore, that the scurvy was not due directly to the alkali but to the action of alkali on the antiscorbutic factor in the milk.

Hess[29] reports a case of scurvy in a baby of 18 months in which focal degeneration was found in the lumbar cord. The process was degenerative, not inflammatory. He does not know whether the degeneration was due to the scurvy or was an accidental association and reports the case simply to stimulate further investigation.

Stefánsson[30] found that the men of the Canadian Arctic Expedition during the winter of 1916-1917 at Melville Island, who had scurvy, had a marked craving for salt. He thinks that salt may play a part in the causation of scurvy. He found that raw meat was the best preventative and cure for scurvy. Cooked fresh meat will probably prevent scurvy, but it is not nearly as effective in the treatment as raw meat. He found that slight putrefaction did not interfere with the antiscorbutic action of raw meat and fish. He also found that there was no relation between bodily cleanliness, ventilation and scurvy. Furthermore, exercise did not prevent scurvy.

REFERENCES.

[1] McCollum: Jour. A. M. A., 1918, lxxi, 937.
[2] Jackson: Jour. Infect. Dis., 1918, xxii, 457.
[3] Harden and Zilva: Biochemical Jour., 1918, xii, 270.
[4] Cohen and Mendel: Jour. Biolog. Chem., 1918, xxxv, 425.
[5] Hess and Unger: Jour. Biolog. Chem., 1918, xxxv, p. 479.
[6] Rappleye: Boston Medical and Surgical Journal, 1918, clxxix, 98.
[7] Chick, Hume, and Skelton: Biochemical Jour., 1918, xii, 131; Lancet, 1918, i, 1.
[8] Hess: Jour. A. M. A., 1918, lxxi, 941.
[9] Hess and Unger: Amer. Jour. Dis. of Chil., 1919, xvii, 221.
[10] Pitz: Jour. Biolog. Chem., 1918, xxxiii, 471.
[11] Hull and Rettger: Centralbl. Bakteriol., Orig., 1915, lxxv, 219.
[12] Givens and Cohen: Jour. Biolog. Chem., 1918, xxxvi, 127.
[13] Harden and Zilva: Biochemical Jour., 1918, xii, 259.
[14] Gerstenberger: Amer. Jour. Med. Sci., 1918, clv, 253.
[15] Pitz: Jour. Biolog. Chem., 1918, xxxvi, 439.
[16] Barnes and Hume: Lancet, 1919, ii, 323.
[17] Harden, Zilva, and Still: Lancet, 1919, i, 17.
[18] Hess and Unger: Jour. Biolog. Chem., 1918, xxxv, 487.
[19] Harden and Zilva: Lancet, 1918, ii, 320.
[20] Harden: Jour. Tropical Med. and Hygiene, 1918, xxi, 205.
[21] Givens and McClugage: Amer. Jour. Dis. of Chil., 1919, xviii, 30.
[22] Chick, Hume, and Skelton: Lancet, 1918, ii, 735.
[23] Chick and Rhodes: Lancet, 1918, ii, 774.
[24] Delf: Biochemical Jour., 1918, xii, 416.
[25] Campbell and Chick: Lancet, 1919, ii, 323.
[26] Givens and McClugage: Jour. Biolog. Chem., 1919, xxxvii, 253.
[27] Harden and Zilva: Jour. Path. and Bacteriol., 1918-9, xxii, 246.
[28] Hess and Unger: Jour. A. M. A., 1919, lxxiii, 1353.
[29] Hess: Jour. Infect. Dis., 1918, xxiii, 438.
[30] Stefánsson: Jour. A. M. A., 1918, lxxi, 1715.

Book Review.

Prothèse et Chirurgie: Cranio-Maxillo-Faciale. Par J. Lebedinsky, Dentiste des Hôpitaux de Paris; Chef du cendre de Prothèse maxillo-faciale de la IV° région; et M. Virenque, Ançien interne Médaille d'or des Hôpitaux de Paris Chirurgien de Place au Mans. Préface de M. le Dr. H. Delangenière, Chirurgien des Hôpitaux du Mans; Chirurgien chef du 2° secteur chirurgical du Mans. 154 Planches comprenant 421 Figures. Paris. Librairie J. B. Bailliere et Fils; 19, Rue Hautefeuille. 1918. Tous droits réservés.

The first view of this paper covered volume of 400 pages produces in the mind of the average American physician certain sensations which may fairly be described as emotions; if he has studied abroad, the reader's thoughts immediately fly backwards ten, twenty or thirty years, to scenes now half forgotten, to various foreign cities, to clinics in which the English language is seldom heard, and to medical books, always of paper and unbound: here is one of those familiar books; the same large clear type, wide margins, flat surface; an easily opened volume, and one which stays open; the same modest but perfect pictures, the same curious placing of index at the end, and the same light weight, even of a good sized volume. Americans pride themselves upon being a practical people, but we are infinitely less "practical" than the French in many things, and conspicuously so in the matter of text-books.

Another "emotion" will strike the reader of this particular volume, and a question—how is it possible that as a nation we have been from 1870 to 1915 so completely hypnotized by German, to the practical exclusion of French medical literature? Here is a book that is superlative in its own way: a French surgeon and two surgeon dentists, experts in prosthesis, have written it in conjunction: wounds of the head, jaws and face are considered, as they should be, together: the ingenuity, care and resource here testified to, are superb; the results almost beyond belief. Not all French artists are painters; some are physicians and surgeons.

The book covers: Wounds of the Head and Neck; of the Salivary Glands; of the Nerves; Fracture of the Jaws; Occlusion of the Jaws; Cranioplastics for loss of soft parts of bones.

The volume deserves careful study by all good surgeons.

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THE PHYSICIAN'S RESPONSIBILITY FOR NARCOTIC DRUGS ISSUED BY NURSES.

Because the Internal Revenue office regards nurses as agents of physicians or institutions under whose supervision or direction their duties are performed, the Federal authorities also hold these physicians or institutions responsible for all narcotic drugs issued through nurses and demand strict accountability on official records of such drugs dispensed and the amount returned from nurses as unused.

These methods for accountability provide the authorities with an ample check on the traffic in narcotic drugs and enable inspectors to determine readily any excessive distribution which may result in abuses of the law.

The reason for holding practitioners and institutions responsible for the drugs issued to nurses is due in a great measure to the fact that nurses are not permitted to register or to be in possession of narcotic drugs or preparations except as agents of consumers. The issuance of narcotic drugs to nurses as consumers will be subject, of course, to the same limitations as in the case of any other consumers.

When there are issued to nurses, as agents, drugs to be administered to patients it is incumbent upon the practitioner or the institution to see that upon the discharge of the nurse from the case all unused drugs are returned and proper accounting made upon the records. Any such narcotic drugs found in the possession of a nurse not at the time under the supervision of a practitioner shall be forfeited to the government.

If a physician has more than one office, as is frequently the case, separate registration must be made for each location and each office is given an official order number. Should such a physician be called to prescribe narcotic drugs at a place away from either office he should use the official number assigned to the principal office.

In taking drugs from one place to another the Internal Revenue office insists upon the official forms being used to make a record of the transaction in order that inspectors may follow the disposition of the stock; otherwise the records would show a discrepancy.

THE NEED OF LABORATORIES FOR DIAGNOSTIC PURPOSES.

The successful practitioner of medicine is he who can make an accurate diagnosis. Without it all treatment must be but guess work.

Our medical textbooks give long lists of symptoms more or less in the shape of a catalogue and from them the student is to picture to himself disease. The time is long past when this method can bring relief to the sufferer or credit to the physician. In these days we must replace the catalogue of symptoms by accurate knowledge of how the various organs of the body are functionating. In other words, the diagnosis must be based upon laboratory findings and bedside observations of instruments of precision. These must be interpreted by men who have made especial study of the physiology of certain organs, both in normal and in diseased conditions. The ordinary practitioner cannot hope to master accurately all of the specialties of medicine. This being the case, we shall see that in the near future physicians will form closer associations among themselves for the purpose of diagnosing more accurately the cases that come before them. They must have at their command, therefore, a working laboratory.

In the smaller communities it will be some time before the laboratory facilities are developed adequately; but there is no reason why the older practitioner should not associate with him a younger man, who can do the necessary laboratory work, thus bringing to his patients a better diagnosis with a corresponding improvement in the health of the community. It is to be hoped that in time, when the public appreciates the value of health, we shall see developed local laboratories as a part of the public health administration of the State. These laboratories could do not only the usual public health work, but could serve as diagnostic laboratories at the service of all physicians.

THE LEGAL DEFENCE OF PHYSICIANS.

At the recent trial of a damage suit against a Boston physician, defended by the Massachusetts Medical Society, the judge made a decision important not only to the defendant but to all surgeons. He heard only the plaintiff's side of the case, which included all the doctors who knew the case, as well as the defendant himself. At this stage of the case the judge said in effect: "All the doctors in this case agree as to the facts and in opinions. You, therefore, have no question as to facts to present to the jury. Such differences as there are in opinion are concerning surgical technique and these matters are not for any lay jury to pass upon. I therefore close the case and direct the jury to bring a verdict for the defendant."

This decision indicates a line of defense against the present epidemic of suits against members of our professon. If the professional experts on both sides, in open, fair discussion of the case before the trial, find they honestly can agree on certain facts, those facts, at least, and the agreement upon them, can be brought out clearly at the trial. Such differences of opinion as are discovered, if found to be purely technical, will never reach a jury. A few such court decisions would tend to discourage "contingent" lawyers, would check the blackmailing class of plaintiffs, and would leave to be attacked only those surgeons who are not giving due skill and ordinary care.

POSTAL PRIVILEGES OF THE PHYSICIAN.

Some time ago we called attention to a practical way in which the Federal Government could assist the local health administrators without the expenditure of any considerable amount of money. We suggested that the same mailing privileges be granted the health official that are now granted the experiment stations.

For a time the Wassermann tubes sent through the mail were sent free, but now we have the following letter from the Public Health Service which takes away that privilege:

"Penalty envelopes or labels may not, therefore, be furnished to private individuals to transmit in mail, without payment of postage, specimens for diagnosis or any other matter except written or printed official information and indorsement."

This decision will add greatly to the cost of the supervision of the venereal diseases. Although we can have almost any privilege extended to the farmer for the benefit of his cattle, when it comes to saving the life of a baby or a child who has inherited syphilis, or a young person who may have been infected innocently, it appears that the physician must pay all the expenses.

MEDICAL NOTES.

Major General William C. Gorgas in Peru.—Major General William C. Gorgas, former surgeon general of the United States Army, sailed for Lima, Peru, on April 1, to visit Belgium and West Africa. He will devote the next five years to directing the sanitation work of the Peruvian Government. He will return to Peru in January, 1921. During his absence, Colonel Wrightson will remain in charge of the work.

Epidemic of Measles in Rowe.—There is an epidemic of measles spreading through Rowe, Massachusetts, and more than fifty cases, among both adults and children, were reported on April 9. The schools and churches have been closed temporarily. The disease is appearing in an unusually severe form.

Boston Delegates at Meeting of Nursing Associations.—Attending the first biennial meeting of the American Nurses' Association, the National League for Nursing Education, and the National Organization for Public Health Nursing were Miss Gertrude W. Peabody and Mrs. Robert L. DeNormandie, vice-presidents of the Instructive District Nursing Association; Miss Mary Beard, director, and Miss Grace O'Bryan, associate-director, and a group of nurses, who left Boston on April 7. The meeting was held in Atlanta, Georgia, from April 12 to 17.

On April 9 and 10, the National Organization of Public Health Nursing held a special session, during which sections were formed, within the organization, of child welfare and industrial and school nursing. This year, for the first time, laymen were admitted to the directorate of this national organization. Miss Gertrude W. Peabody of Boston and Dr. C. E.-A. Winslow of Yale were nominated for the office of director.

Deffat of Proposed Vaccination Bill.—A bill which proposed the extension to private schools the provisions of the law that requires pupils attending public schools to be vaccinated as a means of protection not only to themselves but to their schoolmates and the community at large, has been defeated in the Senate. This occurred in spite of the fact that the members of the committee on public health were unanimous in their favorable report on the petition and letters were read from principals of many private schools, from the leading colleges in the state, and from other educators, expressing the hope that the bill would be made a law. A further effort is to be made by anti-vaccinationists to bring about the abolition of compulsory vaccination in public schools, by the introduction of a bill providing that a written statement from a child's parent or guardian to the effect that he is opposed to vaccination shall be sufficient to excuse the child from vaccination. It is reported that representatives of the State Department of Health are strongly opposed to the proposed abolition of vaccination in the public schools.

NEW ENGLAND NOTES.

War Relief Funds.—The following contributions have been acknowledged by New England War Relief funds:

French Orphanage Fund	$577,087.01
French Wounded Fund, for the American Hospital at Rheims	329,220.08
Fund for Devastated France	199,057.73
Fund for Russian Refugees	106,954.05

Scarlet Fever at Brown University.—Investigation made by the Health Department of the recent outbreak of scarlet fever at Brown University has shown that it was due to infected milk served in one of the college restaurants. No new cases have been discovered, and the college, which was closed on March 25, was reopened on April 8.

The Massachusetts Medical Society.

COMMITTEE ON PUBLIC HEALTH STATE-WIDE HEALTH WORK.

This is a copy of a letter sent to thirteen health organizations in the State April 10, 1920:

Dear Doctor:

At a meeting at the Boston Medical Library on March 18, 1920, of representatives of organizations interested in state-wide health work in Massachusetts, it was voted that the Public Health Committee of the Massachusetts Medical Society arrange with your organization to select delegates to take part in the completion of the organization of the Massachusetts Health Council.

You are accordingly requested to take such measures as may be necessary to have *two* such delegates present to represent your organization at a meeting to be held for this purpose at the Boston Medical Library on Wednesday, May 12, 1920, at 12.30 p.m.

You are also requested to notify, prior to the date of the meeting, the Secretary of the

Public Health Committee of the Massachusetts Medical Society, Dr. Annie L. Hamilton, 141 Newbury Street, Boston, Mass., whether or not your organization will send delegates, and if so the names of the delegates.

A buffet luncheon will be served.

Among the matters of business which may be expected to come before the meeting are the following:

The election of officers.

The selection of a committee on by-laws.

The selection of a committee on membership.

The selection of a committee on ways and means.

The selection of a committee on legislation.

The selection of a committee on publicity and education.

Yours truly,
Annie Lee Hamilton,
Secretary.

Miscellany.

LUNCHEON FOR GEN. LEONARD WOOD.

A complimentary luncheon for Dr. Leonard Wood was given at the Hotel Somerset by members of his class in the Harvard Medical School, on April 13, 1920. Dr. Henry Jackson, chairman, made the following introductory remarks:

Ladies and Gentlemen:

We have come together to do honor to General Leonard Wood as a noted son of Massachusetts because his early years were passed in this State, though an army man is not a resident of any state. You want to hear what he has to say, therefore my remarks will be brief; yet I wish to rehearse in a few words some of the most remarkable incidents of his career.

He entered our medical class in the fall of 1880 and at once impressed himself by his virile personality and his kindly good fellowship upon all who had the privilege of his friendship. Early in 1885 he entered the medical department of the Army, having passed an examination with high rank. He at once wished to be associated with the Line officers, so that before he was thirty he took an active part in the Geronimo campaign. In this campaign of nearly two years he won the respect of his superiors and his men by sharing with his men all the hardships of this dangerous service. His great endurance enabled him to carry out the whole campaign, and I think he was the only officer who remained with General Lawton from first to last.

Then came several years as surgeon in Washington.

As the result of his training as a line officer, he went to Cuba as Colonel of the Rough Riders. His active mind had so grasped the danger of war with Spain that he had made such preparations that his troop was equipped while others were considering how men could be recruited.

In his position as Governor of Santiago and later as Military Governor of Cuba, he showed his ability as an administrative officer. Perhaps his greatest success was due to his ability to choose men able to do his bidding, and having picked a good man, he trusted him. He chose Cubans to work in Cuba.

He found Cuba dirty, full of disease, and left it well governed, without yellow fever, equipped with schools. After he had cleaned Cuba and found that yellow fever was still rife he was ready to grasp the importance of the suggestion that yellow fever was not a "filth-born" disease and stood back of the heroic work of Surgeon Reed and his co-workers.

Then he was immediately sent to the Philippines as Governor of the Morro Province. In this work he encountered the greatest difficulty, exercised the greatest patience, and only in the end proved to the natives that his work must be carried out, even if force were necessary; diplomacy first, force second.

When the Great War broke on the world, he at once and in all places urged "Preparedness," started Plattsburg and other camps, without, perhaps, adding to his popularity as an officer.

Such has been the career of General Wood:—Geronimo campaign: Colonel in Spanish war: Governor of Cuba; Governor of Morro Province.

Yet a greater victory was his. When in July, 1918, his division was about to sail, he was relieved of his command. Then he conquered himself, a man till then unconquered. He did not sulk, he did not fume, but like a soldier took his order, parted from his men and went back to equip another division.

Dr. Worcester: This meeting, Mr. Chairman, as I take it, is merely a clinical conference—such as we used to have years ago. You remember how they were conducted, how each in turn had to stand up before the class and make a report of a case that had been assigned to him for study. It was not enough to have made a right diagnosis: we were also required to tell what the treatment should be. Perhaps you remember how once, when only the diagnosis had been given, Professor Francis Minot asked. "Well, what would you do for the patient in such a case?" The unfortunate student answered, "Nothing." Then, with a foot stamp that I for one can still hear, came the old soldier's indignant, "But you've got to do something and do it damn quick." I have forgotten the name of that *laissez faire* student. Of one thing I am sure: it was not Leonard Wood.

In our student days, just as we were divided into sections for dissecting and what not, so we were called upon in alphabetical order to discuss cases of which we were all equally ignorant. And, if I may be pardoned a personal remark, I have always been glad that my last name was at Wood's end of the alphabet. But now in our puzzling cases we have learned to ask for help in diagnosis and therapy from experts in the different specialties. That is what we propose to do now. And, instead of holding this class meeting behind closed doors, we have asked you all to join in our conference, to hear what our specialist in governmental troubles has to say.

For our anxiety today is not for any individual patient. It is for the whole body politic. We are worried about the health of the Nation. We don't like our country's behavior of late towards other members of the family of nations. We have had our surfeit of foreign wars. And, worse than our misconduct in foreign affairs, we cannot help noticing alarming symptoms of grave internal disorders.

There is a general restlessness that bodes ill. Epidemics threaten to become even more rampant. Not only the physical infections that we have long known, but now at our ports of entry, if indeed not already incubating here, there is the new contagious insanity of Bolshevism. Those of us who at close range have seen that disease are as afraid of it as we are of the devil himself, whose child it is.

Confronted as we are by these world-wide perils, that threaten the health and even the life of this nation, and indeed the very existence of civilization, what do we see being done by our Government at Washington? What is the matter there? Is it general paralysis or only an anaemic neurasthenia? Whatever the disease, such bickering in and between the different branches of the government, such loose discharges of words combined with such torpid inaction, certainly indicate the need of heroic remedies. What shall these be?

Plainly we need expert advice. And we need for our advisor one who knows the whole country, from the sand beaches of Cape Cod to the rocky cliffs of the Golden Gate; who knows Washington through and through. We need a man who has had experience in treating community disorders.

Have we such a one? Yes, we have!

If Cuba can be cleaned up and governed honestly and efficiently, why cannot the United States be likewise? It can be!

If it be asked why the medical profession at this particular time should be so concerned with politics, our answer is that while the government was going on fairly well we have left it to the lawyers and other professional politicians. We admit that we have been remiss in the common duties of citizenship. But now we are waking up: nor are we alone in this awakening. Other professions are also taking unwonted interest in the coming presidential campaign. The engineers, for example, are claiming that it would be well for the country to have a mining engineer in the White House. Very well. Such confidence in one's own profession is all right. But it will avail nothing unless such confidence shall be shared by the country at large. And so, if we doctors believe that the country needs for its leader a man who has had thorough medical training, who has made good in finding out and in rooting out the causes of disease, who favors preparedness as the best prevention of war, if, in short, we believe we can point out the man needed, it is up to us to give our reasons for so believing.

There may be those who would grant that while such a preparation perhaps does fit a man for uncovering the essential causes of our national ills, and even for recommending the proper remedies, some folks may question if any physician or surgeon would have the executive ability to carry into effect the needed remedial measures.

Clemenceau in France and our new ambassador from England, Sir Arthur Geddes, both of them doctors of medicine, were not found wanting in this respect. Their medical education and previous service certainly stood them and their countries in good stead during the darkest days. Nor need we go so far afield for an example. We have with us one whose medical training has not seemed to interfere very much with his executive ability.

That he is also a Harvard Doctor of Laws and a Major-General of the Regular Army does not obscure the fact that he is still an M. D.

But I am taking up too much of your time in proving what, after all, needs no demonstration. You, Mr. Chairman, have well explained why we have chosen one of our classmates to give us the diagnosis of our country's troubles. And if you will ask him to tell us also what remedies are indicated, you may be very sure he will not answer "Nothing."

And you, fellow physicians of Massachusetts, after hearing him, you may agree with us that the case of our troubled country may safely be put in his hands. For we all know, and the whole country knows, that Doctor Leonard Wood has never yet failed in any service he has been called on to render.

Dr. Jackson: Gentlemen, I ask you to rise to a toast (necessarily dry).

I give you General Wood: an able surgeon, a successful officer, a great administrator.

Major-General Wood, in response, outlined some of the greatest needs of our country at the present time. Health, he said, is such an important part of the nation's welfare that there should be organized a separate Department of Health, to which should be assigned a cabinet member. There should be, also, a Department of Public Works, with a secretary in the cabinet. If each of these subjects could be managed by one definitely organized department, there would be less overlapping of duties than there exists now when the work is being conducted by many different departments. A third subject which he believes to require more attention is public education, which should be raised to as high a standard as possible: the best teachers should be encouraged by higher salaries.

It is General Wood's opinion that it is not radical changes which are needed in our Government, but a steady building up of a strong public opinion. Those who are rousing race and religious issues are perhaps the most dangerous men with whom we have to deal. It is important, however, that in the deportation of aliens from this country we should be certain of the rights in the cases before taking action against them. In referring to the railroad strike, General Wood expressed the belief that attempts at revolution within organized labor will tend to make labor more conservative. He emphasized the importance of giving aliens intensive courses in Americanism, for which we should awaken as strong and active a national feeling as its enemies have against it.

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MASSACHUSETTS STATE COMMITTEE, COUNCIL OF NATIONAL DEFENSE, MEDICAL SECTION. FINAL REPORT OF SECRETARY AND TREASURER.

April 16, 1920.

To the Subscribers to the Fund of the Massachusetts State Committee, Council of National Defense, Medical Section:

The Massachusetts State Committee was officially discontinued by order of the Executive Committee at Washington, D. C., on April 1, 1919. Since that time the committee has issued a list of Massachusetts physicians in the Medical Corps of the United States Army, Navy, the Red Cross, or the British Service during the Great War, compiled from the cards collected by the committee and checked by the official files in the offices of the surgeon-generals of the Army and Navy, and the Red Cross at Washington. A copy of this list was sent to every man who had been in the service, to the chief libraries of the State and to the authorities at Washington. It appeared that 31.3 per cent. of all the physicians of the State had been accepted by the Government for service. The card catalogue of the committee and all of the records that have been placed in the fireproof vault at the Boston Medical Library, an institution that is always open to every physician of Massachusetts, for future use, should occasion require. The total number of subscribers to the fund was 940; subscriptions of 928 of these were acknowledged in the columns of the Boston Medical and Surgical Journal, issues of August 29 and October 24, 1919; the remaining 12 were acknowledged by individual receipts. The balance of the Fund remaining after all expenses had been paid, amounting to $1,354.19, was paid to the treasurer of the Boston Medical Library, March 18, 1920, by the former executive committee: J. B. Blake, chairman; W. L. Burrage, secretary and treasurer; C. A. Porter, R. B. Greenough, for the purposes expressed in the following vote of the Executive Committee of the Boston Medical Library in accepting the fund at a stated meeting of that committee, held April 12, 1920:

Voted, To accept with thanks the fund turned over to the Library by the Massachusetts State Committee, Council of National Defense, Medical Section, the fund to be known as the "Medical National Defense Fund," the income to be used for the purchase of books on Military and Naval Medicine and Sanitation; the principal to be held for use in case of a military emergency similar to that for which the fund was originally contributed.

TREASURER'S STATEMENT.

Receipts:		
Balance on hand August 1, 1918	$26.31	
Total amount subscribed by 940 contributors ...	2,072.97	
Interest from State Street Trust Company	46.60	
Total fund		$2,145.88
Expenses:		
Rent of typewriter, printing, stamped envelopes, letterheads, filing cases, cards, trip of Miss E. M. Goodridge, unpaid secretary, to Washington, printing lists of Massachusetts physicians in service in the Great War, mileage of members of Volunteer Medical Service Corps' committee, report of Suffolk County Auxiliary Committee, telegrams, boxing card catalogue and records of committee and placing in the vault at the Medical Library ...	$791.69	
Paid to Treasurer of Boston Medical Library ..	1,354.19	
		$2,145.88

Respectfully submitted,

Walter L. Burrage,
Secretary and Treasurer.

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RESOLUTIONS ON THE DEATH OF DR. ELMER E. SOUTHARD.

At a meeting of the Boston Society of Psychiatry and Neurology, the following resolutions were passed on the death of Dr. Elmer E. Southard:

In the death of Dr. Elmer Ernest Southard this Society has sustained a severe loss.

From the first, his fellow-members recognized in him unusual qualities of mind and character. Beginning as a worker in the field of neuropathology in its narrowest sense, he soon widened its scope and aims so as to include the major aspects of psychiatry, which owes much of its present position as an important branch of medical science to his leadership and the enthusiasm he inspired in others. While developing the medical and scientific side of psychiatry, he never lost sight of its social aspects, as embraced in mental hygiene.

He planned the laboratories of the Psychopathic Hospital and was its first medical director. With no experience and no traditions to guide him when the hospital was opened, he developed it into a clinic unsurpassed, in some respects, either in this country or abroad.

His industry was unceasing. He was the author of many scientific and other contributions of great value. He attended innumerable meetings and conventions, medical and general, in different parts of the country, reading papers, and taking a leading part in discussions. As a speaker, he had unusual gifts, possessing beside a firm grasp of his subject, clarity, facility and humor.

In addition to his regular duties at the hospital, he always had under his supervision as Pathologist of the Commission of Mental Diseases, special investigations at the State institutions. During the war he was a most zealous and efficient worker and was instrumental in raising the standard of psychiatric work.

He was a man of great force of character, honest and fearless. No one could be a more determined fighter when a principle was at stake, but no one could be more considerate and gentle to those who opposed him. His simplicity, his artlessness and his warm-heartedness made it easy to have a feeling of affection for him.

We mourn the loss of a noble friend of the highest attainments. The best tribute we can pay to him is to emulate his example and keep psychiatry on as high a level as possible, at the same time doing our utmost to make it of practical use to the community, as a means of preventing mental disease.

Walter Channing,
William N. Bullard,
Henry R. Stedman,
Committee.

Obituary.

EDWARD THAYER TWITCHELL, M.D.

Dr. Edward Thayer Twitchell of Dorchester died at Santa Barbara, California, where he had gone for his health, March 26, 1920. He was the son of Dr. George Twitchell of Keene, New Hampshire, where he was born January 19, 1863. After graduating from the schools of Keene he entered the Harvard Medical School, taking an M.D. in 1886, when he had finished his service as house officer at the Boston City Hospital. He settled in practice at Ashmont and practised there until forced to go away by a breakdown, following the influenza epidemic. Dr. Twitchell was physician to the Convalescent Home of the Boston City Hospital and to Milton Academy; he joined the Massachusetts Medical Society in 1885 and had been Councilor and Supervisor from the Norfolk District. His widow, who was Elizabeth Schuster, of Brattleboro, Vermont, survives him, as do two sons and two daughters.

ERRATUM.

In the obituary of Professor Southard in the Journal of March 25 it was stated that "he was appointed to the Professorship of Neuropathology endowed by Dr. W. N. Bullard." The Bullard Professorship of Neuropathology was not endowed by Dr. Bullard but by his mother, Mrs. Louisa Norton Bullard, in memory of her husband, William Storey Bullard.

SOCIETY NOTICES.

Wachusett Medical Improvement Society.—A course in early diagnosis of pulmonary tuberculosis and methods of treatment will be given under the auspices of the society, at the Rutland State Sanatorium, through the coöperation of the medical staff of that institution and of specialists in tuberculosis, practicing in Rutland, beginning Thursday, May 20, 1920, at 3.30 p.m.

May 20. History Taking and Physical Diagnosis, Dr. George N. Lapham.

May 27. Classification of Cases. Demonstration of Methods of Physical Diagnosis, Sanatorium Staff.

June 3. General Treatment, Sanatorium Staff.

June 10. Treatment of Hemorrhage and Pneumothorax, Sanatorium Staff.

June 17. Occupational Therapy, Dr. Bayard T. Crane.

June 24. X-Ray, Tuberculin and Other Tests, Laboratory Methods and Simple Technique of Sputum Examination, Sanatorium Staff.

The members of the State Sanatorium staff who will take part in the teaching are: Dr. Ernest B. Emerson, Superintendent; Dr. Leon A. Alley, Assistant Superintendent; Dr. David E. Mann, Dr. Halbert C. Hubbard, Dr. William B. Davidson, and Dr. Mary E. Gaffney.

The object in presenting this course is to promote early diagnosis and control of pulmonary cases and it will be open to all physicians of both sexes. The facilities at Rutland are ample for illustrating any phase of the subject.

There will be no charge for tuition.

For enrollment or further information address

Dr. Ransom A. Race, *Secretary*,
Paxton, Mass.

Worcester District Medical Society.—The next regular meeting of the board of Censors will be held in the Worcester Public Library, Thursday, May 6, 1920, at 4 p.m. Candidates should file application not later than April 20, 1920. Please note change in meeting place.

At the meeting of the Society held on Wednesday, April 14, 1920, at 4.15 p.m., in Red Men's Hall, 19 Pearl Street, Worcester, the following papers were read: War Neuroses, illustrated by slides, Dr. Michael M. Jordan, Worcester; Renal Function Tests, case reports, Dr. Roger Stansfield, Worcester.

Dr. William J. Delahanty, *Secretary*.

RECENT DEATH.

Dr. Henry Sherman Kilby, a graduate of Harvard College in the class of 1873, and of the Harvard Medical School, class of 1878, died suddenly at his home in North Attleboro, on the evening of April 10, 1920. He had been critically ill with pneumonia, but was considered well on the road to recovery when the end came without warning. Dr. Kilby was born 68 years ago in Eastport, Maine, and received his early education in the public schools of that town and at the high school at Chelsea. After a year as surgical interne at the Boston City Hospital, he began practice at Wrentham, remaining there six years. Then followed a period of travel in Europe, and in November, 1884, he took up his permanent residence in North Attleboro. He had been a Fellow of the Massachusetts Medical Society since 1877. He served for years on the school committee and also as school physician, a position he held at the time of his death. For 26 consecutive years he was parish clerk of the Universalist Society, but recently resigned that office. He leaves his widow, formerly Miss Mercy Francis of Taunton, and one brother, Quincy Kilby of Brookline.

The Boston Medical and Surgical Journal

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Original Articles.

THE RELATION OF TEETH TO GENERAL HEALTH.

By Charles H. Lawrence, M.D., Boston.

Until recently, the physician regarded the teeth as the dentist's responsibility, and looked upon their function as a purely mechanical one, beneficial indeed, but not absolutely essential. The effect of general diseases such as syphilis upon the teeth was recognized, but regarded as of importance largely as a diagnostic sign of disease, and the loss of an efficient mechanism for mastication was of importance mainly from a cosmetic point of view. True, medical literature since the time of Hippocrates contains occasional observations concerning the effect of the teeth on general health, but these are usually concerned with their influence upon the development of the jaws and facial bones. As portals of entry for infection, the tonsils enjoyed unchallenged popularity, and the systemic degenerative diseases were usually ascribed to the effects of heredity, exposure, alcohol, diathesis, or autointoxication.

Gradually, however, by scattered reports of relief from so-called incurable conditions following the extraction of carious or abscessed teeth, attention was turned toward them as possible etiological factors in organic disease. And when, in 1914, Rosenow[1] reported that organisms of the streptococcus-pneumococcus group could gain entrance to the body through the teeth, and thence hie themselves to its uttermost parts, changing their appearance as they went, the medical profession enthusiastically accepted diseases of the teeth as the roots of all the evil which had not previously been assigned to some other cause.

Pyorrhea was suspected of causing many of the diseases of the digestive tract, and when peridental and apical abscesses were found coexisting with nearly all chronic organic disease, it seemed logical to many minds to establish a causal relation between the former and the latter. The result thus far has been an awakened appreciation of the importance of the care of the mouth, which is undoubtedly beneficial, and the extraction of thousands of teeth, the beneficial effects of which are in many cases open to doubt.

A review of the literature brings to light a vast deal of theory upon the relation of dental conditions to general health. It is theory only, and while it is valuable in stimulating research, it does not form a sound basis for treatment of patients. It is important, from the practising physician's point of view, to separate theory from proven facts, and to use the former as a guide in his examination of problems, the latter as the criteria of his procedure.

What are the facts concerning the first, or temporary teeth? That their eruption may cause loss of appetite, depression of the digestive function and nervous irritability in a child seems proven by clinical experience. It was long believed that "cutting teeth" was an adequate explanation of convulsions in infants. I cannot find satisfactory proof of this theory, and I believe that it is dangerous to accept it without reservation. There have been instances in which no other cause for convulsions was found by most thorough examination, but they are rare. Eruption of a tooth should never be accepted as the cause of convulsions until most painstaking examination has eliminated all other possible causes.

Malocclusion of the temporary teeth has been satisfactorily proven to cause improper development of the palatal arch and facial bones, with resulting nasal obstruction and its results. And there is no doubt that a high percentage of children with badly decayed teeth show other physical defects: Adenopathies, anemias, iritis, nasal obstruction, otitis, and rachitis. Odenthal,[2] for example, found glandular swellings in 99% of children having badly decayed teeth, against 49% of those having no caries. Dr. Wright of the Harvard Dental School has shown that contagious diseases are more frequent in children with carious teeth than in those whose teeth are sound. But does the coexistence of carious teeth and systemic disease prove that the former cause the latter? Or is the reverse true in some cases? or may both be due to improper diet and malnutrition? It must be borne in mind that carious primary teeth usually mean a neglected child, and that other factors, such as improper diet, or obstructed breathing, are probably present.

These conditions must be eliminated before a coincident anemia or infection can fairly be ascribed to the dental caries. The general health will, of course, always be benefited by the proper treatment of the diseased teeth, but caution must be exercised in accepting them as the cause of systemic disease, in order that less easily demonstrated but more important factors be not overlooked.

More important than the temporary teeth as factors in general health is the second or so-called permanent denture. Persisting much longer, it is by that very fact more subject to diseases. These occur most frequently after the middle of the third decade, and are thus contemporaneous with the degenerative systemic diseases. Research upon the causes of these conditions has disclosed the fact that infection in and around the teeth commonly coexists with many pathological conditions of obscure origin, and that in certain instances, improvement in general health follows the elimination of the dental sepsis.

Billings[3] has shown clinically that infection of the teeth is common in patients with chronic arthritis, and that elimination of such infection often has a beneficial effect upon the joint condition. Cultures of the streptococci obtained from apical abscesses have caused arthritis when injected into rabbits. Gilmer[4] has found pyorrhea or apical abscesses in the majority of patients seen by him for iritis and allied ocular diseases. Miller[5] has isolated 58 varieties of organisms from the mouth, "many of which were pathogenic or under certain conditions might become so." Hartzell and Henrici[6] were able to demonstrate the streptococcus viridans almost invariably among other organisms in cultures taken from apical abscesses, and even in cultures from the roots of healthy teeth. Thoma[16] has shown that maxillary sinusitis is often secondary to apical abscess, and has called attention to its relation to other diseases of the nose and throat.

The situation is summed up by Barker,[7] who in 1918 stated that arthritis, osteitis, osteomyelitis, periostitis, myostitis, embolic pneumonia, pleuritis, nephritis, ureteritis, myocarditis, endocarditis, pericarditis, lymphadenitis, neuritis, neuralgia, iritis, anemia, septicemia, and pyemia, may in certain cases have their origin in oral sepsis, and that there is a growing tendency to look upon the same etiological factor as contributory in many instances to chronic degenerative diseases like arteriosclerosis and hypertension. He further enumerates the following disturbances of the digestive tract as the most common ones associated with oral sepsis: Gastritis, gastroenteritis, achylia gastrica, pylorospasm, toxic hepatopathies, and probably some cases of gastric and duodenal ulcer.

It would seem that the quantity of evidence against the teeth was overwhelming. But a careful analysis of its quality makes conviction less certain. The majority of the articles are statements that infected teeth were found in the mouths of those suffering from a given disease, or assertions that oral sepsis *may* in certain cases, cause pathological conditions. Granting the possibility, is there any available evidence as to how often they do?

Hammond, analyzing forty cases of arthritis, found that in only twelve were the teeth alone diseased. After treatment, one case showed striking and immediate improvement, one improved after subsequent use of vaccine, three cases showed "some improvement," two were unimproved after extraction and one after pyorrhea treatment, one improved without dental treatment, and one could not be traced.

At the Robert Brigham Hospital, examination and treatment of the teeth of all patients was carried out systematically. Dr. Thoma, who had charge of the work, found that in a series of eighty-one patients, seventy-two had dental abscesses, and that in order to put their mouths in proper condition it was necessary to extract three hundred and thirty-four teeth. These patients were suffering from chronic disease, in the majority of cases arthritis of long duration. In very few was there definite improvement following the extractions. This does not prove that the local infection, if that be the cause of arthritis, did not originally gain entrance through the teeth. If so, it had become firmly established in the joints, and late extraction could do no good. It must be remembered, however, that many sound bacteriologists have been unable to confirm Rosenow's finding of streptococci in the majority of arthritic joints, so that the assumption that the teeth are portals of entry for infecting organisms in arthritis is as yet not firmly established. The fact that streptococci cultivated from the teeth cause arthritis in rabbits loses much of its significance in the light of Billings' statement that "streptococci from any source may produce acute joint lesions in inoculated animals, especially rabbits."

Almost every physician, however, has seen cases of chronic disease which improved remarkably after the elimination of dental sepsis. It is not to be denied that infected teeth cause disease elsewhere in the body, but I can find no convincing evidence that they are usually responsible for the many diverse conditions ascribed to them. Black[8] reports a series of roentgenograms of all the teeth of three hundred individuals. They were selected irrespective of medical and dental histories, and examined for the existence of oral and systemic disease. There were eighty patients under twenty-five years of age so examined. Forty-eight, or 60%, showed x-ray evidence of peridental or apical abscesses, or both. Sixty-nine, or 86%, were classified as negative as regards systemic disease; six, or 7.5%, complained of occasional muscular or joint pain, and five, or 6%, gave a story of well defined systemic disease. There were fifty-one patients between the ages of twenty-five and twenty-nine. Thirty-eight, or 71%, had dental sepsis, and three, or 5%, had systemic disease. Between thirty and thirty-nine years of age, 87% of patients showed oral sepsis, with 9% of organic disease; between forty and forty-nine years, 89% had abscessed teeth and 20% had systemic disease, while after fifty years of age tooth infection was present in 100%, and 32% had organic pathology. It will be noted that there was a sharp rise in systemic disease incidence between 40 and 49, though there was only a 2% increase in dental sepsis as compared with the preceding decade. The figures for the entire series showed that 77% of all the patients had dental abscesses, and 77% were free from organic disease, 23% giving systemic pathology. The presence or absence of other possible causes of the systemic diseases was not noted by Black, nor is there a comparison, as regards general health, with a series in which he found no sepsis. It cannot be said, therefore, how much the incidence of organic disease was increased by the oral sepsis, but there is no indication that dental infection was a fertile cause of pathological conditions. Hammond[9] states that in the majority of cases the dental lesion is so thoroughly walled off that many deny the possibility of this condition becoming a focus of infection except in rare instances.

However thoroughly the septic process may be walled off, it is conceivable that it may cause systemic degenerative changes by acting as a source from which continued absorption of small amounts of protein takes place. These small continued doses of poison may act directly on the various tissues, or may sensitize the body to a whole group of proteins which would then act as toxic agents. It has been shown by Miller that protein sensitization is not specific, and the work of Walker demonstrates that a patient sensitized to one protein is usually sensitized to several. The beneficial results in arthritis, obtained by intravenous injections of suspensions of dead typhoid bacilli also suggest that arthritis may be due to protein poisoning.

The great objection to this theory lies in the fact that it has never been demonstrated, in a sufficient number of instances of coexisting dental and systemic disease, which existed first. Cardiac disease, nephritis, arteriosclerosis, anemia, indeed all chronic diseases have a depressing effect upon the general health, which may conceivably allow previously sound teeth to become infected. That pathogenic organisms do exist in the roots of healthy teeth has been shown by Hartzell and Henrici, and the injurious effect of chronic disease upon the nutrition of the teeth has long been known. It therefore seems as logical to suppose that an anemia or a nephritis may depress the local resistance and allow active dental infection to occur as that the reverse is the case. Carbuncles and diabetes frequently coexist, and proper treatment of the carbuncle usually improves the diabetic's condition, but it is not argued that carbuncles cause diabetes. In regard to oral sepsis in this disease, Joslin[10] says, "It is my impression that the changes in the teeth are subsequent to the onset of the diabetes, but I am open to conviction on this point." At present, who can say more, as regards any chronic disease, on either side of the case, if individual instances are excepted?

Because of these individual instances, in which the elimination of dental sepsis gives brilliant results, there is a tendency to regard any tooth which shows an abnormal shadow on the x-ray film as the cause of almost any coexisting disease of obscure origin. As is usually the case when a new discovery is made, there has been too much enthusiasm concerning the possibilities of dental infection, too much generalization, and too little careful, critical investigation. Many ingenious theories have been advanced, and a few facts established. It may be regarded as proved that in certain instances dental sepsis does cause systemic disease. Therefore a careful examination of the teeth should always be made, and the patient should be questioned concerning dental symptoms. It should be remembered that the absence of pain does not exclude abscesses at the roots, and that if no other foci are found, and the systemic disease suggests focal infection as an etiological factor, dental consultation and x-ray examination of the teeth should be made. Infected teeth which serve no useful purpose should always be extracted. But if the x-ray findings alone are positive, extraction of useful teeth should be reluctantly performed, since results show that benefit is obtained in only a small number of cases and the extracted tooth is not always as bad as the x-ray indicated. No promises of cure should be made, and the patient should clearly understand that the operation is in the nature of an experiment. Even though dental infection be present a careful search should be made for other foci. Absorption from tonsils, pharynx, sinuses, pulmonary infections, digestive and genitourinary tracts should be eliminated before the teeth are held accountable. It must be remembered that caecal stasis, a diseased gall bladder, or an infected prostate may be the cause of systemic disease, and foci which can be eliminated without the loss of useful organs should be treated before suspected teeth are extracted. Oral sepsis which can be successfully treated without sacrificing the efficiency of mastication should be eliminated in every case. It should not be forgotten, however, that mastication is an important part of digestion, and that disorder of nutrition may arise from lack of teeth. In his work on disease of the heart, MacKenzie[11] says, "The great importance of oral digestion is not sufficiently appreciated. Not only does the process of mastication in several subtile ways stimulate the digestive glands of other organs, but the juices from the mouth which are mixed with the food not only assist digestion but prevent the flatulence which is so often a troublesome feature in the weakened digestion of heart failure." This statement applies with equal force to a large number of chronic diseases, the treatment of which is greatly complicated by an ill behaving stomach or a foul mouth due to lack of sufficient teeth for chewing. Anemia and disorders of the digestion may be due in some cases to dental sepsis—in others they are as surely caused by too radical extraction in its treatment.

For this reason, when extraction is necessary, care should be taken that the patient is not left with an insufficient masticating mechanism. The extraction of the diseased teeth is often only half the battle—substitutes must be furnished. The method of doing this is of course a question for the dentist to decide, but I believe that from the standpoint of cleanliness, artificial teeth should not be permanently fixed in the mouth. From the medical point of view, permanent bridge work and similar devices are not desirable.

Such, I believe, are the facts concerning the relation of the teeth to general health. They should not be confused with the theories. The latter are interesting, and will in the future answer questions which are at present vexatious —but they do not form a basis for the intelligent treatment of the individual problem.

The need at present is a method of determining whether the teeth are the cause of the organic disease. So far, this test consists in extracting the teeth and awaiting the result. A test which can be used before extraction would render such a method unnecessary. Cotton[12] has employed the complement fixation test, and finds it valuable in doubtful cases. Unfortunately the technical difficulties of the test greatly limit its use. In conjunction with Thoma, I am at present using the skin reaction to bacterial proteins in a series of cases to ascertain its usefulness in determining the part played by oral sepsis in any individual instance. Our series is not yet large enough to draw deductions from, but if the test proves reliable, its simplicity will make it available in all cases. Thus far, the results obtained by the skin reaction have coincided with the bacteriological findings. A full report will be made when sufficient evidence has been obtained.

Until more clinical facts are available, caution should be used in promising results from the extraction of diseased teeth. Even though extraction is necessary from the point of view of mouth cleanliness, it may not cause improvement in a long established disease process. Unjustifiable enthusiasm is sure to cause reaction, and bring ill repute upon a theory, which though not yet properly tested, offers real hope in the solving of many difficult problems in medicine.

REFERENCES.

[1] Rosenow: Jour. Infect. Dis., 1914. xiv, 1: *Ibid.:* Jour. Infect. Dis., 1914, xiv, pp. 61-80: *Ibid.:* Jour. A. M. A., lxii. pp. 903-907; *Ibid.:* Jour. Infect. Dis., 1915 lxv, pp. 1687-1691: *Ibid.:* Dental Cosmos, 1917, lix, pp. 485-491; *Ibid.:* Jour. National Dental Association, 1918. v, pp. 113-124; *Ibid.:* Jour. Dental Research, 1919, 1, pp. 205-249.
[2] Odenthal: Arch. Int. Med., 1912, ix.
[3] Billings: Arch. Int. Med., 1912, ix, pp. 484-498; *Ibid.:* Jour. A. M. A., lxiii. pp. 899-903.
[4] Gilmer: Arch. Int. Med., 1912. ix, pp. 499-504.
[5] Miller: Quoted in Arch. Int. Med., 1912. ix, pp. 499-504.
[6] Hartzell and Henrici: Surg., Gyn., and Obstet., 1916, xxii, 18.
[7] Barker: Southern Med. Jour., 1919. xi, pp. 481, 484.
[8] Black: Journ., A. M. A., 1917. lxix, 8; *Ibid.:* Ophth. Rec., 1915, xxiv, pp. 610-622.
[9] Hammond: Am. Jour. Med. Sci., 1918, clvi, p. 541.
[10] Joslin: Treatment of Diabetes Mellitus.
[11] MacKenzie: Diseases of the Heart.
[12] Cotton: Jour. Dent. Research, 1919, 1, pp. 269-313.
[13] Bell: Jour. A. M. A., 1919, lxxiii, p. 1127.
[14] Longcope: Proc. New York Path. Soc., 1914, xiii, pp. 120-123.
[15] Talbot: Surg., Gyn. and Obstet., 1919, xxviii, pp. 165-174.
[16] Thoma: Oral Abscesses.

THE MILK SITUATION.

By Howard Swift, Concord, Mass.

For the last twenty-five years, here in Massachusetts, there have been sporadic attempts to clean up the milk situation. The diseases that are transmitted through milk that are of any great danger to man are diphtheria, typhoid fever, scarlet fever, foot and mouth disease, septic sore throat, and tuberculosis. The first four are now well regulated; in the United States we are free from foot and mouth disease, and the first three, being acute infectious diseases, are watched carefully. Septic sore throat breaks out occasionally, but it is not so very prevalent, while tuberculosis, a slow insidious disease, chronic in nature, is an enemy that should be considered seriously.

There are three types of tuberculous organisms,—avian, human, and bovine. The avian does little damage, although it is a menace to poultry men. The human type may be transmitted through milk as typhoid, diphtheria and scarlet fever are, but that is more or less a simple thing to control. The bovine type is larger than the human or avian and more virulent in that it kills both rabbits and guinea pigs, while the human kills guinea pigs only and the avian kills rabbits only. The much discussed question immediately comes up as to whether the bovine type affects humans. [1]Robert Koch, the scientist who discovered the bacillus, said in an address before the Tuberculosis Congress of London in 1901, that bovine and human tuberculosis were different diseases; that the human disease was not transferable to cattle, and that it was not necessary to protect a man from pearl disease or bovine tuberculosis. This statement is right in that human tuberculosis does not materially affect cattle, but bovine tuberculosis does materially affect man. as has been shown by many investigators. It has been found that: [2]"Intravenous injections of tubercle bacilli from human sources, non-virulent for cattle, are capable of conferring an immunity against tuberculosis sufficient to withstand natural infection by association." But the report goes on to say, "Until further knowledge is obtained in regard to the destruction or outcome of the living tubercle bacilli constituting the vaccine, no practical method for the immunization of milk producing animals under ordinary conditions can be advocated." It is also believed by many that childhood infections, caused by drinking milk containing living tubercle bacilli, produce an immunity and therefore tuberculous cows are to some extent a good thing. Very probably that would be true if we were always sure that the child was getting a small regular dose of tubercle bacteria in the milk. The amount of tubercle bacteria in milk is an unknown quantity always and undoubtedly milk from a cow with a tuberculous udder contains an innumerable number of tubercle bacteria which in all probability if fed to a human being would cause a very active case of tuberculosis. The natural answer is to remove any cow with a tuberculous mastitis from the milking line. Unfortunately that is easier said than done because. [3]"Unlike other affections of the mammary gland, tuberculosis does not at once change the appearance and quality of the milk secreted. It is a fact that for months after the disease has appeared in the gland, the milk is to all appearances normal and may be sold and consumed without arousing the least suspicion." [4]"This alteration of milk can occur rather quickly. After one month the milk can become distinctly changed. Usually, however, this does not occur until after two months. There are cases, however, in which the milk had retained its normal appearance until four months after the inception of the condition."

[5]Vanderpoel Adriance, M.D., says that "accumulated evidence shows that childhood infection is only the beginning of an adult tuberculosis and if the children are protected adult tuberculosis will diminish." [6]Dr. Harold Dana repeats the above statement by saying, "Ninety per cent. of all children who reach the age of 14-15 years have tuberculous infection; that most if not all tuberculosis of later life is acquired during childhood. Better milk laws and a cleaner milk supply will diminish, if not abolish, milk borne infection."

Dr. Adriance also gives some figures gathered from various sources. Mitchell, of Edinburgh, in some experiments he conducted on enlarged glands in children, found 90% caused by the bovine bacillus. Melcher found 88% to be bovine. Fraser, on bone tuberculosis, found 62% bovine, 35% human, and 3% both. Pollock found 96% of the children in Vienna reacted to a tuberculin test before 15 years of age. [7]A. P. Mitchell, in examination of milk found, in 406 samples taken from different dealers, 20% to be infected with the bovine type. Dr. Brown[8] of Saranac claims that 8% of all cases are of bovine origin and [9]Drs. Park and Krumwiede of the New York Board of Health say that 12.5% of the fatal cases under five years are of bovine origin. Taking Dr. Brown's figures as fair, there were 11,440 deaths from bovine tuberculosis in 1913.

Remember that milk alone is not the danger —butter, cream, cheese, buttermilk, and bologna sausage, in fact, any dairy product that is eaten raw is dangerous. Taking milk as the commonest cause, pasteurization is believed to be the remedy. Before giving the results of some experiments on pasteurization, let us know the state requirements and what pasteurization is. Pasteurization by law calls for[10] holding milk, not more than 72 hours old at a temperature not less than 140° F. nor more than 145° F. for not less than 30 minutes and immediately cooled to 50° F. or lower. Defined pasteurization is[11]: Heating milk at various temperatures below boiling for a variable period of time. To do this, there are three distinct methods—The "Flash" method, the "Holder" method, and pasteurization in the final container. The "Flash" method, where milk is held at a high temperature for a few seconds and flows continuously is not as satisfactory as the "Holder" method, because some milk may be heated in excess of the temperature intended and some milk may not be heated sufficiently.

Pasteurization in the final container is the best method, because it does not afford any opportunity for the milk to be reinfected. But most of the apparatus constructed to heat milk in the bottles is costly, it is more expensive to operate; the bottles must be tightly sealed, requiring a more expensive cap; larger bottles must be used to take care of the shrinkage in cooling and the vacant space permits the milk to be agitated, which may disturb the cream or cause the cream to butter if agitated while warm. The "Holder" process is the commonest commercial method. Exposure to heat to this extent cannot be depended upon to destroy all the toxins and the decomposition products, which may be present in milk as a result of bacterial growth, while at the same time it destroys the anti-scorbutic properties of milk. Moreover, it is not certain that it does not decrease the digestibility of milk.

Let us now look at the efficiency of pasteurization as shown by experiments[11] that have been conducted abroad and in this country. Foster and Rullman found that the tubercle bacilli remained alive in milk kept at 140° F. for 45 minutes. DeJong found living tubercle bacilli after an exposure from 159.8° to 161.6° for 30 minutes, and Van de Sluis found that 176° F. for 60 minutes killed bacilli in naturally infected milk, *i.e.*, milk taken from tuberculous animals. In some American experiments with milk artificially inoculated, *i.e.*, non-tuberculous milk that had a pure culture of tubercle organisms poured in, it was found that 140° F. for 10, 15, 20, and 30 minutes was sufficient to kill the bacteria. These experiments were conducted by Russell and Hastings, Theobald Smith, Rosenau, and Hewlett. A word more about these experiments. They were all done with small samples. In naturally infected milk, the organisms are imbedded in mucous masses, fibrin clots, and tissue shreds. This albuminous covering protects them from heat. In commercial pasteurization, large amounts of milk are run through at once, and in many cases a great deal of the milk may not be sufficiently heated. Besides, a great deal depends on the man doing the work. If the milk is run slowly through the 90°-110° region, the optimum temperature for bacilli to multiply, and then run up fast, and if the same thing happens in the cooling, a great many more bacteria are liable to be present. Also a great many doctors dislike to feed pasteurized milk to infants.

[12]"Saving human life affords the highest motive for combating tuberculosis," prevention of financial loss is alone sufficient reason for undertaking the eradication of the disease from farm animals. Taking all items into account, the aggregate animal loss because of tuberculosis among animals in the United States is estimated at not less than $14,000,000." [13]In 1907 the District of Columbia commenced to reduce their bovine tuberculosis figures. At that time there were 18.8% reactors. In 1917 there were .8%. There are, we all know, a great many more cattle in Massachusetts than in the District of Columbia, but nevertheless if done carefully, it is possible to follow the good example that has been set. To attempt such a movement, coöperation with the farmer is essentially needed and Massachusetts will never have the necessary whole-hearted coöperation until the farmer is given a fair show, which means in the first place more than forty dollars for a condemned animal.

The milk producer is a necessity today. He is a manufacturer of one of the most important items of human food that is used. [14]"Of the list of 19 foods, full records of which have been kept by the U. S. Bureau of Labor, milk stands the lowest in point of average increased price from April, 1918, to April, 1919, *viz.*, 70%. The other 18 range from 72% to 123% increase, an average of 93% increase. Not one of the other 18 foods equals milk in all around food value." The farmer must pay more for all he uses, his investment increases as the cow's value increases and yet his product has not increased proportionately. If the reactors should be removed from a farmer's herd he would lose from 135 dollars and up today per head. Is it any wonder that the farmer dislikes to have the word tuberculosis mentioned? Of course the eradication of bovine tuberculosis is a tremendous idea. Perhaps it is the most Utopian of all dreams. At present the idea of eradication and control of human tuberculosis is in the same class. It would appear though that the control of human tuberculosis depended to an appreciable extent on a much closer control of bovine tuberculosis. To control this menace, first allow the farmer something nearer the true value for a condemned animal. He would then be a little more willing to help in the fight. Second, start a demand for tuberculosis-free milk. This can be done and ought to be done by education of the physician first, who in his turn will educate his patients. Some farmers have said that they would make tuberculosis-free milk if there was a market for the product and if they could receive a price that would allow them a better margin in which to stand the losses.

As has been said above, milk has increased less in price than 18 other foods. When eggs are selling at 70 cents a dozen milk should sell at 41 cents a quart. There is 4/7 as much food value in a quart of milk as there is in a dozen of eggs. People do not feed cheap case eggs to children if they can help it. Then why feed cheap, disease-laden milk? There is no question but what milk should cost more money and be made in a better way if it is to be fed raw to infants, who do not have a very great resistance to disease. Has any one proved that an immunity is produced by drinking infected milk? If that has been done, tuberculous wet nurses would be in demand. Safety First is a popular motto. Is not this the place for it?

To conclude:—Milk in a raw form often endangers the health of infants. The amount of immunity that is transmitted through infected milk for tuberculosis is an unknown quantity. Pasteurization as called for by the present law may not be as safe as is generally believed. There is a considerable loss of life and impaired health directly attributable to the use of infected dairy products. Under the present demand by the public, the producer cannot afford to manufacture a cleaner and better product. Therefore, the medical profession, or those of them who are not awake to the danger, should apply as much prophylaxis as possible.

REFERENCES.

[1] Hutyra and Marek: Pathology and Therapeutics of Domestic Animals, Vol. i. p. 526.
[2] Gilliland, S. H., V.M.D., M.D.: The Production of Artificial Immunity against Tuberculosis in Cattle.
[3] Agriculture in Massachusetts, 1894, p. 392.
[4] Mastitis of the Cow-Sven Wall, p. 101.
[5] Adriance, Vanderpoel, M.D.: Tubercular Infection in Infancy and Childhood.
[6] Dana, Harold, M.D.: The Problem of Tuberculous Infection in Children.
[7] Mitchell, A. P., M.D.: Infection of Children with Bovine Tuberculosis.
[8] Editorial, Boston Medical and Surgical Journal, July 8, 1915.
[9] Report of the Bureau of Labs. of New York, 1912-13.
[10] Dairy Laws, Massachusetts State Department of Agriculture, June, 1919.
[11] Klein, L. A.· Principles and Practices of Milk Hygiene, p. 204.
[12] Moore: Bovine Tuberculosis and its Control, p. 10.
[13] Journal A. V. M. A., November, 1918.
[14] N. E. Dairyman, December, 1919, p. 11.

THE NEW CLINIC.

An Advance Movement in Child Welfare and Race Regeneration.

By J. Victor Haberman, A.B., M.D., M.S.D.,
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The New Clinic is an *idea*, as yet a bit premature, but about to enter the experimental and transversion stage—presently to be an established and familiar fact. The plan calls for the founding of a constituent in behalf of the *normal* child, or let us say a clinic or institution *for the general survey of The Child*, to which children of all ages shall be brought for examination and rating regarding their antecedents and present status in a manner and on a scale not hitherto attempted, and given therapeutic and "constructive" counsel in accordance. Here a child would be studied in relation to its heredity—and its potential and latent trends, normal and abnormal, as intimated through such investigation; its environment and social condition; its infancy and early childhood; its stature, weight, nutrition, development, etc.; its "internal secretions" in their bearing on its growth, maturity and mental development, as well as from the point of view of glandular *type* or "trope," and hence character-*penchant* and disposition to disease; its mental make-up—trends and intelligence; its talents, vocational abilities, etc. Upon the findings noted, therapeutic, pedagogic, social and other corrective measures would be suggested as aids in mitigating or nullifying negative tendencies, in spurring the uphill growth of such individual and inducing the fullest maturing.

A clinic of this nature will inaugurate an entirely new movement in the interest of the child and the community, and, once actualized, will in all probability constitute the real *clinic* of the future. The child will no longer be left to find itself, as at present, nor necessarily reap the mischief of its inheritance, nor first have to fall into disease or upon evil days before being taken in hand and given the necessary advice for its redintegration. On the contrary, the data obtained through modern study of heredity and heritable diatheses, psychopathy, endocrinology, nutrition, etc., etc., and the effective spirit underlying such modern movements as "Mental Hygiene," "Remedial Pedagogics," "Vocational Guidance," "Race Regeneration," "Life Extension," etc., will here actually be applied, and to all children—not only the patently abnormal—of the community.

In a short study published several years ago under the title of "Clinical Psychology in Its Relation to the School and to Social Medicine,"* I already touched upon this matter. Therein I then, among other things, said:

"Abnormalities in the internal secretions may cause mild or serious retardation, possibly mental infantilism, even precocious advance (hyperpinealism?). In fact, such important strides have been made of late in this field of science, that no one, at this stage of investigation, can aver or deny that the internal secretions are not the constructing, stimulating and inhibiting factors in the entire upbuild and psychodynamic leverage of the brain and mind. Our therapeutic and experimentally therapeutic administration of these gland secretions, so easily carried out, may in time prove of inestimable value in the treatment of mental defects and abnormalities, possibly, too, in the mitigation of fatigue and pathologically affected attention, in the goading of interest, diligence, ambition, even in the stimulation of mental exuberance, physical growth and general maturity. Very aptly did Woods Hutchinson express himself not long ago when he said, 'We are such stuff as ductless glands are made of, and our little life is rounded with a sheep.'

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* Medical Record Nov. 20, 1915.

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"There is another decidedly grave problem, the one of most far-reaching significance, to be taken up. . . . Can one, during the school years, discern signs or symptoms in the child which possibly presage nervous or mental trouble or disaster for it in the near or remoter future? And if this is so, could one not institute proceedings which would keep such child from becoming a future neurasthenic or hysterical or obsessed or psychopathic individual, or, indeed, from becoming a delinquent or criminal, or from the fate of insanity itself? And can aught be done for that pathetic class of mortals who are entirely normal up to the eleventh or twelfth year, or to puberty, and then suddenly cease progressing, or begin to deteriorate into one of the deplorable forms of dementia? What an immense proportion of our members are finally disposed of under one or other of these ominous headings!

"And yet we know through such studies as those of Ziehen, Stelzner, and others, that a very large number of such individuals show prognostic signs of impending mischief in childhood (or may have a sinister augury even in their heredity) and that ever so many can be saved to themselves and the State if treated and mentally nutured in time."

Since then the idea has grown apace, and we now have in mind a fully rounded clinical procedure which would overhaul each child physically, mentally, socially and especially anent its latent potentials, and thus work out its horoscope, so to speak, and rearrange its constellations.

We suggest first, the starting of a single such clinic or *center* at which this work would be pursued under direction of a staff of experts, statistical data gathered and the work taught to other groups who would presently carry on elsewhere. In time, every public and private school should have its contingent of examiners and advisers,—a special "personnel"—caring for its individual charges.

It is scarcely an exaggeration to augur that at some near future day the child will not only be fed proper food in order to thrive, but endocrine substances, so as to equilibrize and harmonize growth-tendencies in its physical and mental maturing. The child of dwarfed stock will be given something—possibly thymus-pituitary-thyroid substance—to increase its stature. Such as are sprouting over-tall and lanky will be offered something—possibly gonad substance—to hold their bones in check. The child that is dull or mentally inactive through inheritance or constitutional make-up, will be fed with thyroid or gland combinations, thus to stimulate cortical growth and metabolism. If neuropathy is noted in its inheritance or tuberculosis in the home, the child will be placed in an open-air school and trained with an eye to storing up resistance and meeting eventualities with reserve energy and brawn. Sedative inhibition will be prescribed for some, stimulation for others. Many will be taken from their homes and placed in brighter or more propitious environment, for cheerfulness is necessary to a healthy unfolding, and in all probability, even rhythmic dancing will have its therapeutic place in the school, to dissipate fatigue and foster exhilaration and joy. Not only, however, will the child be tended with an eye to its shortcomings, but by all means with its abilities and special traits in mind. These will be sought out and opportunity given for their individual development. Already these measures are being plied here and there in progressive hands, and sooner or later the facts themselves will be commonplace. The new clinic is to forestall this movement and place it on a systematized and scientific basis.

INTESTINAL OBSTRUCTION.

By E. A. Codman, M.D., Boston.

(Concluded from page 424.)

Case 5. Perhaps this case should not be included in the series for it did not strictly show obstructive symptoms. However, as the paper is not really a statistical one and the case is typical of an important diagnostic point, I have put it in with the others. The point is that sarcoma of the intestine, unlike carcinoma, does not cause obstruction. In other words, the consistency of intestinal sarcoma is such that it sloughs out centrally and grows peripherally, whereas cancer usually shrinks in an annular manner. Sometimes cancer looks like a cicatricial ring about the intestine, so small that the inexperienced might take it for a scar. The operator who finds a *large* intestinal tumor may make a guess that it is sarcoma, especially if the tumor is within the small gut. By *large* I mean the size of an apple—even of a small apple!

The practical clinical point I want to make is this: *Intestinal tumors larger than a small apple do not demand an artificial anus.* If they are growing peripherally you may be pretty sure that they are sloughing internally. It is the small contracting kind that make the trouble.

I have had two other cases of intestinal sarcoma which should perhaps be included in this series, but they both followed the same rule. They were large tumors operated on as exploratory laparotomies rather than for obstructive symptoms. In all three cases the tumors were soft and friable and were ruptured in endeavoring to bring them out of the wound. You might describe them grossly as necrotic dilatations of the intestinal canal rather than strictures. All three died soon after the operation.

Even if the tumor is not sarcoma, but a rapidly growing cancer, the chances are that it will slough centrally rather than produce obstruction, and you will be glad that you did not assume that because there existed a tumor, it would necessarily later cause obstruction. The same rule applies to growths of the rectum. Many a patient has been condemned to an artificial anus by the operator assuming that obstruction would necessarily ensue, when as a matter of fact Nature would have sloughed out the growth. Of course in this connection I am speaking only of inoperable growths, for I believe that intestinal cancers should be excised, even if there are evident metastases in the glands and liver. Enterostomy is a wonderful temporary expedient, but only in people with suitable temperaments is it a justifiable condition for daily life, especially if that life is to be a short one. Its true use is to drain the bowel just long enough to give the patient a maximum chance for a radical operation.

Case 13. This, I believe, was the first case of successful intestinal resection and suture for intussusception at the Massachusetts General Hospital. It was, as in Case 28, caused primarily by an inverted Meckel's diverticulum, Unfortunately the patient was a criminal and I fear that society was not helped by his recovery. And, speaking of criminals and intestinal obstruction, I wonder if a certain individual, whom I have several times been called to see at the Massachusetts General Hospital, has ever turned up at the hospitals in Springfield. I know he has at several of the Boston hospitals, and I have heard of him in other cities. He has severe chronic obstruction, probably from postoperative adhesions. There is a large surgical scar on his abdomen, and he presents a most exaggerated case of visible peristalsis. Great coils of intestine writhe about his abdomen. He is a dope fiend and his game is to enter a hospital as an emergency, to be seen by a member of the staff and listen to advice that he will die if he is not operated on. He gets as far as the operating table, and then bolts—refusing at the last minute. In this way he obtains his dose of morphine and then goes out to an apothecary and moves his bowels with croton oil.*

Cases 24 and 31 may be spoken of together on account of their dissimilarity, for one had a maximum amount of small intestine removed, and the other a maximum amount of large gut put out of commission. The first had 235 cm. of small intestine removed for multiple tuberculous strictures. There have been a few cases recorded where even more than this length of intestine has been successfully removed. This patient survived, but later developed tetany and returned to the hospital, where her case was carefully studied by Dr. W. W. Palmer. Palmer published a paper in the *American Journal of Medical Sciences* in December, 1914. This paper shows that there are still young men capable of enthusiasm for medical advance, and with the zeal, application and energy to do the work, which even Fitz might have envied. One must look with admiration on the detailed work, which is reported in this concise, clear, paper of Palmer's. His conclusions show that it is very doubtful if we are ever justified in removing so much of the small intestine. His summary follows:

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* In the discussion it developed that several of the surgeons in the audience had seen this person, whose case illustrates the wonderful hypertrophy of which the small intestine is capable.

"1. Absorption studies after resection of more than half of the small intestine are reported.

2. The loss of nitrogen in the stools is four to five times that of normal individuals.

3. The loss of fat in the stools is five to six times the normal loss.

4. A high urinary indican, 800 mgrs. is reported (normal 10-50 mgrs.).

5. Ammonia forms a much larger part of the urinary nitrogen than in normal individuals. This is probably due to the extensive putrefaction taking place in the intestine.

6. The success with which a large portion of the intestine may be removed depends to a large degree on the condition of the intestine remaining. This fact, I believe to be important and should be considered carefully before extensive resections are undertaken.

7. A diet low in fat and moderately low in protein should be given in cases where much intestine has been removed."

Palmer found that he could control the tetany in this patient by alteration of the diet and the administration of calcium. However, he could not at the same time keep up her nutrition. She grew thinner and thinner, and left the hospital weighing about 80 pounds and in very poor mental condition. There were palpable masses in her abdomen suggesting recurrence of the original disease. She died one year and three months after the operation.

On the other hand, the case without the use of the large intestine, grew very fat, or rather, still fatter, for she was fat before the operation.

This patient was first operated on by Dr. Hugh Cabot for a volvulus of the large intestine. A colostomy was done and after the patient recovered a second operation was done to close the fecal fistula. Four and one-half years later I saw her with a recurrence of the acute volvulus, which involved the cecum and most of the large intestine, there being no adhesion of the colon to the parietal wall, either congenital or postoperative. The gut was gigantic, and the obstruction was evidently chronic, for no acute condition could have led to such enormous distention and at the same time thickening of the walls. An emergency cecostomy was again done, but I felt that something more would be necessary to really cure the condition, and accordingly after a few weeks I isolated the large bowel by doing an ileo-sigmoidostomy and dividing the ileum near the ileo-cecal valve and the descending colon just above the ileosigmoidostomy. The proximal end of the descending colon was then brought out on the surface, like an artificial anus, although of course the fecal stream did not pass through it, as the whole large intestine was completely sidetracked. However, it was necessary to do something to provide an exit for the discharge of intestinal mucus which otherwise would accumulate in the enormous blind pouch. Thus it was possible to syringe into the cecostomy and have the washings come out of the colostomy.

My plan in thus isolating the abnormally dilated portion of the intestine, was founded on the idea that it would shrink from disuse, when the fecal stream no longer passed through it, especially as the chronic obstruction was relieved and there would be no gas to dilate the gut. I intended later to excise the isolated portion when it had become reduced to normal proportions, and the mesenteric bloodvessels which had been huge, had, through lack of use, atrophied. The plan worked well, in fact so well that the patient would not consent to another operation. She is still living, eight years after the operation. The cecostomy has closed, but the colostomy is still open and through it every week or two comes a well-formed fecal mass, in appearance and odor much like normal feces, although of course there is no food residue—only the secretions of the intestinal mucosa. The case offers a wonderful opportunity to study the physiology of the large intestine, for not only the chemistry of the secretions could be determined, but food could be injected and the absorptive power of the large intestine studied. Her nutrition does not seem to suffer but she has a hernia in the scar.

All three of the cases of volvulus of the large intestine which I have operated on were of the cecum, although it is said that twists of the sigmoid are more common. All my cases had the fetal type of cecum and ascending colon without parietal adhesion. I am more and more struck by the influence which congenital faults have in bringing about pathologic abdominal conditions. Even inflammatory conditions of the appendix and gall bladder have their real origin in kinks, in many cases. Volvulus is associated with lack of parietal adhesion, just as intussusception is associated with Meckel's diverticulum. Case 32, for instance, had no parietal attachments and the cecum even roamed so far, that the appendix was attached to the *left* costal border by inflammatory adhesions. In this case I removed the dilated proximal half of the colon, for it seemed certain to get into trouble again if I returned it to the abdomen without some anchor. In Case 19 I did nothing but untwist the gut and put it back and this was the only case which died. Death took place suddenly from pulmonary embolism, after the wound had healed and the patient was about to go home. I assume the embolus was in the stem of the twist all the time, in one of the mesenteric veins. Perhaps such cases are not often reported, and it may be safer to resect than to return the damaged gut.

In looking over the rest of the series to find the lessons they have taught me, which I may transmit to you, I find it a temptation to talk about every case, for I am proud of them all. Moynihan says: "During the operation, the surgeon will need all his dexterity, rapidity, and judgment." Unfortunately these qualities are not transmissible by speech or paper, even if I possessed them, but to my mind success depends more on the surgeon's mental than his manual processes. Knowledge and judgment in using it, seem to me the important factors. Local anesthesia and anociassociation may take the place of much rapidity and skill, desirable as they are. Moynihan concludes his paragraph: "The surgeon must discover what has to be done and must do it with all possible despatch." To that I emphatically agree. I like the use of the word "must." Sometimes it merely means an abdominal section and incision of the first distended coil which presents; sometimes the resection of several feet of intestine, followed by anastomosis. Atypical cases will frequently appear where unusual expedients are necessary, but the more extended our knowledge, the less frequently will the atypical be seen, and the less frequently the expedient be unusual. Judgment really consists in our applying our knowledge of possible expedients to our knowledge of possible pathologic combinations. The surgical interne of today will get better results in these cases than the wisest and most fashionable surgeon of a century ago. His judgment may be poorer, but the range of his knowledge is far greater.

There are a few more of my cases which, though not illustrating as important principles as those I have spoken of at length, may still add to your knowledge of possible pathologic conditions and possible expedients which may be used to combat them.

Case 27, although successful as far as my operation was concerned, had a recurrence of the intussusception twice afterward and was operated on by another surgeon with a fatal result. I regret that I did not excise a gland, the size of a walnut, which lay in the mesentery at the ileocecal junction. This gland was, I believe, the cause of the tendency to invaginate. Judgment at the time said that I did all that "must" be done, and I did it "with all possible despatch." But judgment, now that it has the knowledge of that case and its final result, would insist on enucleation of the little gland. Of the four cases of intussusception here reported three had pathologic entering points. In the fourth none was found; simple reduction and appendectomy was done; no recurrence took place. I do not believe it necessary to "anchor" the gut in cases of reduced intussusception, if no abnormal entering point is found. In ileocecal cases it may be well to take out the appendix.

Cases 25 and 35 illustrate that two cancerous strictures sometimes exist in different parts of the large intestine, and that it is well to look the intestine over before going to work.

Case 25 also illustrates that the same patient may have a tuberculous stricture and later a cancerous one. It teaches that spontaneous umbilical fecal fistula should make us suspect primary cancer of the sigmoid. It illustrates splendidly Porter's method of mobilization of the peritoneum to close large defects of the abdominal wall. This case and Case 30 illustrate what W. J. Mayo has tried to teach us—that cancer of the large intestine, even though advanced enough to involve the abdominal wall, may still be operable, because some types have tendency to spread *only by local extension*, and though presenting a tremendous abdominal mass, do not have metastases. In Case 30 I removed two separate portions of the gut, did four end closures, two lateral anastomoses, and excised the whole mass together with a good-sized piece of the abdominal wall, which the cancer had invaded. Yet no recurrence had taken place five years later.

Case 40 showed that an adherent cancerous omentum can cause obstruction secondarily and that it may be relieved.

Case 21 illustrates the value of an excessively high leucocyte count (35,000) in arriving at the diagnosis of mesenteric thrombosis. In obstructive conditions the presence of such high counts should suggest this diagnosis. In my opinion, it is almost pathognomonic.

Case 29 adds impaction of a coil of intestine beneath a previous intestinal anastomosis to the list of possible causes, and teaches the wisdom of so suturing the mesentery after anastomosis, that the gut cannot pass under the bridge.

Case 41 illustrates how insidious the onset of complete obstruction may be in cases of cancerous stricture, which have shut down slowly and by dilatation and infiltration of the wall of the intestine have accustomed it to hold an amount of toxic fecal material which probably would have produced death if acute. This patient continued to feel so well, had so little pain and vomiting, that she could not be persuaded to have an operation until two weeks without a movement had passed and various purgatives had been administered. The effectiveness of the purgatives was demonstrated, when her enormously distended tympanitic abdomen was opened and she was found to have had a movement in her own abdominal cavity! The tympany was due to intraperitoneal gas: the intestines, not particularly distended themselves, lay beneath this gas cavity lightly glued with fibrin. On raising the omentum I found a large puddle of free soft feces lying on the adherent coils of small intestine. This was gently wiped out without further exploration and a drain introduced. Although 76 years old, she recovered (of course with a fecal fistula), only to die six weeks later, after an attempt to excise an adherent cancer of the descending colon.

So much for the unusual cases. As to operative technique, I attribute the success of this series almost entirely to the early diagnosis. Next, to the general advance of surgery—such things as general abdominal technique, moist sponges, cigarette drains, avoidance of post-operative cathartics, gentle manipulation, the use of local anesthesia with or without general anesthesia. Preoperative stomach washing and the other things which generally contribute to the success of ordinary cases, are doubly important in these critical cases. There is one method, however, which, owing to the modesty of its originator, needs more advertisement. Monks' work on intestinal localization is known to many but it should be *studied* by every surgeon who ever expects to do an operation for obstruction. The Monks tube should be used in most cases of obstruction and in some cases of wounds of the intestine. I feel sure that some of my earlier cases died from intestinal absorption after the obstruction was released. They stood the operation well, but their toxic symptoms went on rapidly from bad to worse, and they died in the next 24 to 48 hours without rallying. The contrast is striking when the intestine is drained on a Monks tube (any tube will do, *e.g.*, a glass drinking tube). The slight shock the intestinal manipulation causes is well compensated by the result. I believe there is an actual immediate improvement in the pulse, after this is done, comparable to that wonderful improvement the pulse shows when the stomach is washed out for acute dilatation. I even think it justifies a second incision in cases of strangulated hernia, where the outcome seems doubtful. In using it, the only practical hint necessary is to make a large enough incision so that the gut can be threaded on the tube without pulling on the mesentery. When you use it, use it thoroughly, and empty the whole small intestine. The shock caused by threading the tube will be compensated by the shock avoided in closing the wound over distended coils.

There are certain general principles which should influence judgment in these cases:

1. The stomach should be emptied before operation, by the use of the tube. Vomiting is too often partial—a mere overflow.
2. Local anesthesia should be used whether or not general anesthesia is necessary also. This is to combat shock.
3. The obstruction must be relieved.
4. The circulation of the involved gut must be restored, or the non-viable portion resected (with liberal removal of any doubtful infiltrated intestine proximal to the constriction, in cases where immediate suture is contemplated.)
5. The content of the bowel above the stricture should be removed.
6. In all but the most extreme cases, the cause should be at least determined and judgment used as to simple enterostomy or removal of the cause.
7. Recurrence should be considered and if possible prevented.
8. Unessential details should be sacrificed to speed, but the seven principles mentioned take precedence of speed.

Of the expedients to which the surgeon may resort to accomplish the ends the following are the chief:

1. Simple enterostomy—a small median abdominal incision and a deliberate cut in the first distended coil which presents. (Moynihan calls attention to the fact that curiously enough this is usually the most desirable coil.) It is almost as simple to tie in a Paul or Mixter tube and save soiling of the wound. (Case 10.)

2. Search for the cause and selection of the most favorable place for an enterostomy. (Case 24.)

3. Removal of the cause. (a) Taking time for its liberation as in the cases of the bands, twists or invaginations (Case 33); (b) taking time for its excision as in cancer or gut devitalized by twists (Case 4).

4. Removal of cause followed by colostomy (Case 22).

5. Removal of cause followed by anastomosis of intestine (Case 35).

6. Removal of cause, lateral anastomosis and proximal enterostomy (Case 28).

7. Short-circuiting of cause by lateral anastomosis (Case 36).

8. Short-circuiting of cause by exclusion as in Case 24.

9. Ligation of pedicle and enterostomy (Ref., BOSTON MEDICAL AND SURGICAL JOURNAL, April 2, 1908).

10. The use of Monks' tube in addition to any of the above (Case 40).

Success will depend on the surgeon's judgment in choosing the right alternative in accordance with the above principles in the individual case. He must modify his desire for an ideal result by a just estimate of his own technical ability and of the patient's capacity to bear further manipulation.

In my opinion, the use of the Monks or Moynihan tube to remove the poisonous content above the obstruction, should never be given up because of the condition of the patient. A case which would die because of the slight additional shock of this procedure, would surely die later from the septic absorption; on the other hand cases may seem in good condition on the table and yet never rally after an apparently completely successful operation. where the toxic contents are left in the gut. Even when a colostomy is made, toxic absorption may still go on, before peristalsis awakens in the distended, infiltrated, anaesthetized intestine. I am inclined to think that the importance of the factor of toxic absorption is underestimated by the average surgeon who worships speed, but Kocher and Moynihan—true masters of surgery—have given the message for all who will stop to listen.

INFERENCES FROM THE SERIES.

The series includes all the acute and a few severe subacute cases of intestinal obstruction on which I have operated in the last 20 years. and also one in which I assisted Dr. C. A. Porter (Case 25). Cases of low rectal cancer, cases of vicious circle following gastroenterostomy, and cases of strangulated hernia, are not included. Such a small series can hardly be expected to furnish statistics, but we may draw inferences and stimulate someone to investigate the statistics of some large clinic. Since intestinal obstruction is not a distinct pathologic entity but rather a common symptom of several or many conditions, and further, since the line between acute and subacute obstruction is next to impossible to draw, we cannot expect to come to mathematical conclusions. Nevertheless, there is in every surgeon's mind a composite picture of this class of case, which, though hard to define, has a real meaning.

Mortality. Of the 41 cases, 14 died in hospital, although four of these did not die of obstruction, but of pneumonia, or embolus. two or more weeks after the operation. The series of 27 cases since January 1, 1904, have all been successful as far as the relief of obstruction was concerned, although one died of lung embolus on the 16th day and one of pneumonia on the 14th. All the cancer cases but one died of the disease or operation for it sooner or later. There have been no known bad late results among the non-malignant cases, except those described above.

The inference is that modern surgical methods are adequate for the relief of obstruction if we consider:

The influence of early diagnosis. Of the 14 cases which were fatal, all but Case 2 had had symptoms for over 48 hours. Of the 27 which survived 14 had symptoms less than 48 hours, while of the remaining 13 the cause was subacute or an exacerbation of a chronic one.

The inference is that the practitioners of this community have applied the appendicitis lesson

Case	Hosp. Number	Date	Age	Sex	Duration	Result	Cause	Operation
1	A Western hotel	4/12/99	35	m	48+ hrs.	Death in 14 hrs.	Cicatricial appendix	Appendectomy
2	A private hospital	4/24/00	42	f	24 hrs.	Death in 24 hrs.	Contraction scar penholder	Release bands
3	M.G.H. 374-176 E.S.	7/31/00	78	m	4 days	Death in 24 hrs.	Band mid. small intes.	Release bands; tap. intes.
4	M.G.H. 390-124 E.S.	6/26/01	68	m	3 days	Death in 24 hrs.	Mesenteric thrombosis	Resection 6 ft. enterostomy
5	M.G.H. 390-194 E.S.	7/15/01	32	m		Death in 24 hrs.	Sarcoma small intestine	Resection tumor, enterostomy
6	M.G.H. 392-36 E.S.	7/17/01	33	f	subacute	Death on 14th day	Tuber.stricts. intestines	Resection 14 ins.; anas.
7	M.G.H. 390-230 E.S.	7/22/01	50	m	5 days	Death on 5th day	Annular cancer sigmoid	Resec. and anas.
8	M.G.H. 390-200 E.S.	7/26/01	17	m	48 hrs.	Recovery	Post-op. ads. (recent ap.)	Release and enterostomy
9	M.G.H. 394-102 E.S.	8/12/01	47	m	5 days	Death on 9th day	Post-op. ads. (old)	Enterosotomy
10	M.G.H. 394-182 E.S.	9/ 3/01	31	m	48 hrs.	Recovery	Post-op. ads. (recent)	Enterosotomy
11	M.G.H. 412-163 E.S.	7/ 3/02	30	m	48 hrs.	Death in 48 hrs.	Band from Meckel's div.	Excision diverticulum
12	M.G.H. 128468 E.S.	8/19/02	8	f	24 hrs.	Death in 24 hrs.	Post-op. ads. (recent)	Release and enterostomy
13	M.G.H. 129172 E.S.	9/26/02	24	m	3 days	Recovery	Intussusception (Meckel's)	Resection and anas.
14	M.G.H. 133222 E.S.	7/18/03	19	m	48 hrs.	Death in 48 hrs.	Band from Meckel's div.	Release bands; tap. intes.
15	M.G.H. 136311 E.S.	2/28/04	6	f	24 hrs.	Recovery	Intussus. (ileo-cecal)	Appendectomy and reduction
16	M.G.H. 122-121 S.S.	11/18/05	54	m	24 hrs.	Death in 1 month	Cancer hepatic flexure	Cecostomy
17	M.G.H. 150-318 E.S.	11/17/06	43	m	5 days	Recovery	Undetermined. Anuria	Colostomy and divulsion strict. urethra
18	M.G.H. 155296 E.S.	10/16/07	34	m	5 days	Recovery	Post op. ads. (old)	Release ads.
19	M.G.H. 161404 E.S.	12/ 5/08	62	m	3 days	Death on 16th day	Volvulus cecum.	Release of twist.
20	Malden Hospital	6/10/09		f		Recovery	Ads. from prev. perit.	Release ads.
21	M.G.H. 166524 E.S.	10/23/09	44	m	4 days	Recovery	Mesenteric thrombosis	Resection 4 ft.; anas.
22	M.G.H. 167195 E.S.	12/ 2/09	67	m	24 hrs.	Recovery	Cancer of sigmoid	Resection and enterostomy
23	M.G.H. 169347 S.S.	4/11/10	18	m	48 hrs.	Death on 14th day	Post op. ads. (recent)	Enterostomy
24	M.G.H. 176271 W.S.	5/25/11	45	f	5 days	Recovery	Volvulus cecum	Exclusion large intestine
25	C.H. 53	8/22/12	37	f	subacute	Recovery	Cancer trans. colon & sig.	Resection and anas.
26	M.G.H. 184608 W.S.	8/26/12	21	f	3 days	Recovery	Band from ad. appen.	Release and appendectomy
27	M.G.H. 184848 W.S.	9/ 9/12	5 mos.	f	3 days	Recovery	Intussus. mes. glnd.	Reduction
28	C.H. 105	3/21/13	46	m	34 hrs.	Recovery	Intussus. (Meckel's)	Resection; lat. anas.; enterostomy
29	M.G.H. 188264 E.S.	3/25/13	40	f	5 days	Recovery	Rotation abt. anas.	Reduction and closure opening
30	C.H. 110	3/28/13	57	m	subacute	Recovery	Cancer cecum, ileum, etc.	Resection and anas.
31	M.G.H. 189750 E.S.	6/20/13	39	f	subacute	Recovery	Multiple tuber. strictures	Resection 9 ft. and anas.
32	C.H. 155	9/13/13	66	m	48 hrs.	Recovery	Volvulus cecum.	Resection and anas.
33	C.H. 222	10/ 6/14	45	m	14 hrs.	Recovery	Post-op. ads. (old)	Release ads.
34	Deaconess	10/ 7/14	41	f	3 days	Recovery	Post-ops. ads. (recent)	Release ads.
35	C.H. 237	2/ 3/15	45	f	subacute	Recovery	Cancer sigm.	Resection and anas.
36	C.H. 258	5/18/15	59	m	subacute	Recovery	Cancer (il.-ce. and rec.-sig.)	Lateral anas.
37	Home, Ayer, Mass.	11/16/16	73	f	8 hrs.	Recovery	Band and partial volvulus	Release ads.
38	C.H. 387	3/ 8/17	62	f	18 hrs.	Recovery	Band in appen. region	Release ads.
39	Cousens Hospital	6/22/18	55	m	24 hrs.	Recovery	Post-op. ads. (old)	Release ads.
40	N. E. Sanitarium	7/31/19	63	f	12 hrs.	Recovery	Cancerous omentum	Excision portion, enterostomy
41	York Hosp.	8/19/19	76	f	2 wks.	Recovery	Cancer desc. colon	Drainage of spontaneous perforation

M. G. H. = Massachusetts General Hospital

C. H. = Codman Hospital

(in many cases perhaps unwittingly) to this condition also. But the 48th hour in obstruction is far more significant than in appendicitis.

Pathologic Causes		
Mesenteric thrombosis		3
Tuberculous stricture		2
Malignant stricture		10
Intussusception		4
Volvulus		3
Rotation about anastomosis		1
Bands and adhesions		
not from previous op.	6	
previous op. (recent)	4	
previous op. (late)	5	
Meckel's diverticulum	2	17
		40
Undetermined		1
		41

Inferences. Bands and adhesions are the most common cause although in about half the cases there had been no previous laparotomy. This is surprising, but is substantiated by the statistics of Fitz (1888), who found that bands were the most common cause, although in those days laparotomies were relatively uncommon.

Age in Relation to Cancer. It is said that most cases of obstruction in patients over 45 are due to cancer. Of the 19 cases over 45, 8 were due to cancer, 6 to bands, 3 to volvulus, 1 to mesenteric thrombosis, 1 to intussusception.

Inference. In a patient over 45, if there is no previous history of laparotomy and the onset is not sudden, cancer is much the most probable cause.

Sex. Seventeen females, 24 males, is in accord with previous statistics.

Book Reviews.

A Treatise on Cystoscopy and Urethroscopy. By Dr. Georges Luys, Former Interne, Hospitals of Paris; Former Assistant in the Department of Urinary Diseases at the Lariboisiere Hospital; Laureate of the Faculty of the Academy of Medicine. Translated and Edited with Additions by Abr. L. Wolbarst, M.D., New York; Cystoscopist, Beth Israel Hospital; Consulting Urologist, Central Islip and Manhattan State Hospitals; Genito-Urinary Surgeon, West Side German Dispensary and Hospital; Author of "Gonorrhea in the Male," etc. With 217 figures in the text and 24 chromotypographic plates outside the text, including 76 drawings from original water colors. St. Louis: C. V. Mosby Company. 1918.

In these days, when the cystoscope and the urethral endoscope have come to be recognized as the basis of the diagnosis of so many of the diseases which afflict the urinary tract, any book on the subject which comes from the pen of an author of experience cannot fail of interest. Ever since the cystoscope was in the infant stage of its development, Dr. Luys has been keen to provide some means of studying the divided urines, and his segregation was an ingenious effort in that direction.

He now comes forward as an advocate of the direct vision instruments, and this book is, as he says, an effort to "popularize the science of direct vision cystoscopy," and to illustrate in detail the possibility which it offers. Although direct vision cystoscopy has not been received in this country with universal commendation, it has its many followers, and it certainly has its many indications for usefulness.

The book, although a large one, has but few chapters. They deal with the technic of urethroscopy and cystoscopy and their practical applications. In the two chapters, devoted respectively to indirect and direct vision cystoscopy, there are many interesting comparisons of the two methods, and many illustrations of their value in definite conditions. The chapter devoted to the history of endoscopy, urethral and vesical, together with the interesting discussions on its varied technic, make the book of real importance to those concerned in such work It is pleasant to note the excellent quality of the publisher's work, and to appreciate his wish to make it, in these times of high cost of production, his "contribution to France."

Clinical Case-Taking. By Robert D. Keith, M.A., M.D. New York: Paul B. Hoeber. 1919.

Prepared as a hand-book for students in a colonial hospital, this little book is a simple, informal outline of methods employed by the author in case-taking. In the form of a notebook the subject matter is arranged under General Examination, Circulatory System, Respiratory System, Digestive System, Nervous System, Excretory System, and a final chapter on Microscopical Examination. No attempt has been made to offer the book as a standard nor to lay claim to superiority of method. It is not technical in its descriptions and is obviously intended as a brief summary of the points to be covered in the elementary physical examination of patients which goes to make up the routine of the medical student's early practical experience.

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THE STATUS OF THE DEFECTIVE DELINQUENT SINCE THE WAR.

Until the large number of defective delinquents in this country was revealed by the war, there was manifested toward this group of citizens little concern outside of the profession and among sociologists. It remained for the statistics revealed by the Provost Marshal General's report to arouse public and legislative opinion to a recognition of the magnitude of this problem and the necessity for further information and suggestions in regard to its solution. In this work, Dr. Guy G. Fernald, Resident Physician of the Massachusetts Reformatory, Concord, has rendered valuable service by discussing the status of the mental delinquent and the possibilities of his reformation and return to some place in society. Of especial interest are two of his articles, "The Defective Delinquent Since the War," and "Current Misconceptions Regarding Reformations."

Of the 442,000 men rejected or discharged from our army during a period of about fifteen and one-half months, in 5.54 per cent. of cases the cause assigned was mental deficiency. It is interesting to compare this figure with 5.36 per cent. rejected for mental and nervous disorders and with .4 per cent. rejected for the misuse of alcohol and drugs. A definite group of 14,417 men of drafted age has been computed as unfit for military service because of mental deficiency. If this ratio of prevalence of mental deficiency found in the army were to be applied to the twenty-four million men enrolled for service we shall have a group of 1,330,000 men liable to rejection for mental deficiency.

The existence of this large group of extra-institutional feeble-minded, including, of course, some defectives of vicious tendencies, indicates the necessity of adequate consideration of the welfare and possible reformation of its members. Certain individuals are good subjects for reformation if their vicious environment be changed to a healthful moral, and intellectual atmosphere, if this change can be made before the end of the formative period of life, and if the period of healthful environment can be continued beyond the usual penal institution sentence in order that habit formation may assist self-determination when that is tentatively restored. This group of mental delinquents should be segregated completely from all other groups during the period of retraining.

There are undoubtedly some members of the group of defective delinquents unamenable to any method of reformation or rehabilitation. These, after demonstrating their unfitness for community life, must be returned to custody. Hitherto, however, the legal status of defective delinquents has been limited to that of the fully equipped offenders; the latter are subject to the same court procedure and are sentenced to the same penal institutions unless they are found to be insane or feeble-minded to such a degree that they are committed to schools for the feeble-minded. Should not these members of society be judged in the light of their deficiency rather than their delinquency, and measures be adopted so that they can be committed to a suitable environment, a farm colony, perhaps, where their rehabilitation can be at least attempted? Dr. Fernald believes that it is hardly to be expected that our method of placing these people among fully equipped offenders for a short period of time should lead to any rehabilitation of the defective individual, but that it is probable that a defective committed indefinitely to a farm colony would appreciate the fact that he must "make good" in order to regain his liberty. This situation would call forth his best efforts.

It is commonly believed by many unthinking persons that a wrong method of living can be changed with little difficulty to a right one whenever the attempt is made, and that in some miraculous way a person may be reformed merely by serving a short sentence in a reformatory. The fallacy of this belief has been demonstrated thoroughly, and those who deal with defective delinquents intelligently know that it is a long, difficult, and discouraging process. For this reason we should make every effort to determine the right way to deal with these cases. The first mental activity to be aroused in the offender is believed by Dr. Fernald to be a feeling of regret for the damage which has been done to his own life and to others. The intention to do better in future is the next logical step, which must be followed by some definite constructive plan for better thinking and acting for a period of perhaps five years. During this time, the delinquent should be taught a trade and given what education is possible; he should become one of a group of good associates and friends, and advance considerably on the road to reformation. After some such definite plan has been worked out, the next step for the patient is to make up his mind to follow this plan and determine to adhere to it. The last stage involves going out into the world and living the plan. In many instances, the delinquent may not have sufficient mental equipment to succeed; to care for such cases there should be institutions suitably equipped to train them slowly to form new and better habits of thought and action. Such institutions, or farm colonies, are essential if we are to aid the mental delinquent and make his life a success. Legislative measures to this end are not easy to secure, but it may be hoped that as the need becomes more generally recognized, it will be possible to commit mental delinquents to a favorable environment for a suitable length of time, during which they may be provided with some simple remunerative occupation, education and mental training, and correct medical and moral treatment.

TWO DERMATOLOGICAL PROBLEMS.

We have received recently reprints of two excellent articles of value and interest, written by Charles J. White, M.D., of Boston. In one of these there is presented a critical analysis of sixty-four cases of lichen planus, observed in the private practice of the author. The disease appears to be a relatively uncommon one, in New England at least. It is subacute, at times an acute disease, affecting largely the educated classes, especially those who have suffered some mental disquietude; it seldom follows as a result of an injury. Of the sixty-four cases observed in this series, during a period of nine years, there were forty-four among the old American stock, six each among German-, Scotch-, and French-Americans, one Armenian, and one patient from Ecuador. The disease appears most commonly between the ages of thirty and sixty, and varies greatly in duration; a few cases last only a few weeks, while others last many months, and some persist even to sixteen years. In this group, although the initial lesions appeared first on the flexor surfaces of the wrists in twenty-one percent. of the cases, they appeared also on almost every other part of the body, even on the mucous membranes, where the characteristic violet coloration becomes silvery white. The eventual distribution of the eruption may be universal. The typical objective lesion is an almost pathognomonic papule, although many variations commonly occur; the disease is primarily a pruritic one, entailing suffering at times almost unbearable. Pathologically, there has been noted an initial change in the corium and a subsequent epidermic alteration; perhaps the most characteristic pathologic feature is the almost geometrically straight, inferior border of the cellular infiltration. Treatment of these cases was found to have a palliative effect, but their cure seemed to depend largely on natural evolution.

In a second article, Dr. White has discussed the question of epidermophyton infection, basing his observations in this problem of dermatological diagnosis on the study of one hundred and ninety-two private cases. It appears that the epidermophyton is capable of infecting singly the thighs and the adjacent skin, the toes and feet, the fingers and hands, the axillae, the bends of the elbows and of the knees, the flat surfaces of the trunk and extremities and the scalp, or conjointly any combination of these regions. The infectious agent in this disease is the epidermophyton inguinale, first definitely proved and established in 1910 by Sabouraud. The sources of infection seem to be difficult to determine, there being only two well-defined sources—the use of soiled athletic clothes and the intimate contact with clothing of animal origin. The positive cure of this disease is not easy, inasmuch as a peculiarly penetrative and selective and powerful weapon is needed to destroy the fungus without exerting too strong an organotropic effect. Dr. White has described his methods of treatment, mentioning especially the favorable results obtained by the careful and judicious use of Whitfield's ointment. As there has been little written on this subject from a first-hand knowledge of the disease, and a large proportion of medical practitioners, at least in New England, appear to be ignorant even of the existence of the condition, this paper has been written chiefly for the purpose of emphasizing the importance of the whole question of infection with epidermophyton or its kindred organisms.

ENDORSEMENT OF THE POST-GRADUATE $2,000,000 CAMPAIGN BY THE NEW YORK ASSOCIATION FOR MEDICAL EDUCATION.

The New York Association for Medical Education, organized last August to develop New York's opportunity to become the medical centre of the world, has endorsed the campaign of Post-Graduate Medical School and Hospital for a $2,000,000 Endowment Fund as "worthy of support because it is an important step toward providing a very necessary training for graduate physicians."

The board of directors, on which every medical school in the city is represented, has given official approval to the endowment campaign. The following remarks have been made by Dr. Wendell C. Phillips, president of the association:

"America must meet the enormous demands of the physician for training that will keep him abreast of the progress of medical science. Post-Graduate is the oldest institution for post-graduate medical training in the nation. It is in an excellent position to do a great work. But if this work is to be done, it must have funds.

Berlin and Vienna have fallen as centres of medical education, but even if they had not, New York's opportunity would be huge, for nowhere else is to be found the wealth of clinical material that this city holds.

"Medical schools and hospitals in New York —and conspicuously Post-Graduate—are bending every nerve to provide the training rendered abroad. If they succeed, the 3,000 to 5,000 physicians who went abroad in the years before the war will come to New York It will mean a saving of time and money, for those trips abroad consumed time and were expensive.

"Institutions to provide this sort of training must be provided at home. We have the instructors, for American physicians and surgeons rank high in the medical world. We must teach our young physicians what they should know and we must give the older ones a chance to learn the new things that medical science is constantly developing."

It has been announced that the Endowment Fund now has reached $545,000.

MEDICAL NOTES.

Outbreak of Measles on the Britannia.—A message received from Dr. H. G. Ebert, federal port physician, states that an outbreak of measles occurred among the nine hundred immigrants coming from southern Europe on the steamer *Britannia,* due in Providence on April 10. Those suffering from the disease were removed to the Providence City Hospital.

Spotted Fever in Galicia.—A report from Berne states that spotted fever is epidemic in eastern Galicia. During the months of January and February, 43,000 cases were reported. In some of the Ukrainian districts numerous villages were almost depopulated and in the mountains the disease was complicated by hunger and typhus.

A Physician as Author of "Ben Bolt."—It is interesting to note that the author of "Ben Bolt," for which Thomas Dunn English was chiefly remembered, was a physician, as well as a journalist, a politician, poet, essayist and novelist. Although his professional and public careers are forgotten, "Ben Bolt" has lived for two centuries. Dr. English was born in Philadelphia in 1819. He served in the New Jersey Legislature during the Civil War, and in 1890 was elected to Congress. He wrote fifty plays, more than a thousand poems, and one novel; yet his fame rests wholly on this one poem, which is known throughout the United States and Canada, England and the British possessions.

Transfer of Dr. Hugo Fuchs.—It has been announced that Dr. Hugo Fuchs, professor of anatomy at the University of Königsberg, has been transferred to the University of Göttingen. Dr. Fuchs will succeed Professor Merkel.

Royal College of Surgeons at Edinburgh.—The Royal College of Surgeons of Edinburgh has accepted a proposal to admit women as fellows. They will be admitted on the same conditions as the men, and will take the same examinations and be allowed the same privileges.

Gift to the American College of Surgeons.—The sum of $75,000 has been given by the Carnegie Corporation to the American College of Surgeons to be used for hospital standardization. This is the second gift which the corporation has made to the college; in 1916 it gave $30,000, making a total of $105,000. This fund is supplemented by funds of the college.

Honorary Elections to the Royal College of Surgeons.—The Royal College of Surgeons has elected as honorary fellows Dr. J. M. T. Finney of the Johns Hopkins University and Dr. Charles H. Mayo, of Rochester, Minnesota.

The National Children's Bureau in Belgium.— It has been announced by the Children's Bureau of the U. S. Department of Labor that a national children's bureau has been established in Belgium. It is interesting to note that the law establishing this bureau went into effect several months after the child welfare conferences held under the auspices of our own Children's Bureau in the early summer of 1919. Three child welfare experts represented Belgium at that time.

The functions of the Belgian Bureau are to "encourage and develop the protection of childhood, and especially to further education with regard to rules of child hygiene and to assist in their application, whether in families or in public or private child-caring institutions; to promote the organization of agencies interested in child hygiene, and to assist them by subsidies or otherwise; to assure supervision by the administrative authorities and physicians over the agencies thus protected."

The bureau is directed by a Board of forty members, called the *Conseil Superieur des Oeuvres de l'Enfance*. This Board has the decision on all questions relating to the protection of children; it issues orders concerning the functions of subsidized agencies; it takes necessary measures for the protection of children within the limits of the law, and determines the use of funds at the disposal of the bureau.

To decentralize the work of the bureau, provincial committees are to be established in each province. These committees will consist of from six to twelve members, who will see that the work is organized thoroughly throughout the province and that the orders of the Board are enforced; they will also render opinions or give suggestions to the Board. In addition to this, local committees on which local authorities must be represented are to supervise the infant welfare stations and the agencies which render help to young children and expectant or nursing mothers. One local committee in each community must see that school meals are distributed and special food provided for anemic children. The cost of the school lunches will be met one-half by the state, one fourth by the province, and one-fourth by the community.

The members of the local committees are to meet in regular conference with the provincial committees for the purpose of discussing problems of common interest. All committees, both local and provincial, and the Board are asked to respect the religious and philosophic convictions of the families to which the children belong.

In order to gain the approval of the national children's bureau the infant consultation centers, among other things, must provide for a regular and free physical examination of all children under the age of three in families under the care of the centers and for the organization of educational work to emphasize the value of infant hygiene and breast feeding. The bureau is to organize a system of supervision over placed-out children under seven years of age.

Memorial to Sir William Osler.—The following account of a public meeting held in the University Museum, Oxford, on March 6, to initiate a memorial to the late Sir William Osler, Bart., Regius Professor of Medicine in the university for the past fifteen years, has appeared in a recent issue of *Nature:*

> Sir Clifford Allbutt, who introduced the proposal, paid a feeling and eloquent tribute to the memory of Sir William Osler, to the wide range of his intellect, and to the singular charm of his character. He referred to his international reputation and to the binding influence he had on the medical profession in many lands, to his love of peace and goodwill, and to the extraordinary power he exerted in diffusing without diluting friendship. The president of Magdalen, Sir Herbert Warren, mentioned the many-sidedness of Osler's interests and activities, the breadth and accuracy of his scholarship, and the clear and steady optimism with which he regarded life and its progress in all ages. Sir William Church, who introduced the specific proposal that the memorial should take the form of an Osler Institute of General Pathology and Preventive Medicine, stated that such a memorial as that suggested would be a singularly appropriate tribute to the outlook and ideals that Osler had kept before him in his life-work. Professor Thomson emphasized the need of new laboratory accommodation in Oxford for teaching and research. The dean of Christ Church and Sir Archibald Garrod also spoke. It was announced that the honorable secretary, Professor Gunn, had received expressions of sympathy with the proposed memorial from a large number of people representing many interests, and that a collateral committee had been formed in America to aid in raising the memorial.

Typhus in Russia.—A report has been made by M. Semashko, Commissar of Public Health, to the effect that the typhus in Russia is at present under control and the sanitary conditions improved. He seems to fear, however, a possible epidemic of cholera during the coming summer. M. Semashko is reported to have issued the following statements:

> While there are comparatively few cases of cholera in Russia at present, the disquieting feature is its wide distribution. Our records show that cholera exists in thirty-seven localities. Between December 1 and February 13 there were 425 cases at Cheliabinsk.
>
> The typhus epidemic is well in hand. The disease is most prevalent in the Caucasus, Turkestan and the Ukraine, where the sanitary service has been newly organized. Comparison tables of the cases reported in the army in the last two months show a marked decrease.
>
> The spread of typhus and cholera is being combated with a system of sanitary inspection in institutions and private homes in the cities and villages; the distribution of educational posters and literature emphasizing the importance of cleanliness and also "clean-up" campaigns known as "weeks of cleanliness," the installation of public baths, and the systematic disinfection of railroad cars, 34,000 of which were fumigated in January.

Endowment Fund Gifts to the New York Post Graduate Hospital.—Mrs. Henry R. Rea of Pittsburgh, Pa., has given $100,000 to the New York Post Graduate Medical School and Hospital's $2,000,000 Endowment Fund. Mrs. Rea's gift, given in memory of her parents, the late Henry W. and Mrs. Oliver of Pittsburgh, is to be used in advancing medical standards by providing for practicing physicians and surgeons additional opportunities for post-graduate study and research. Twenty or more scholarships are to be provided by the fund, and will be available to doctors unable to make the financial sacrifices heretofore required in giving up their practices during the periods of post graduate work.

Mrs. Rea's gift is probably unique among benefactions to educational institutions in that it is for the benefit of active professional men to increase their unselfishness to the community. The doctor's responsibility to the public and the handicaps under which he is placed in keeping abreast of medical progress were particularly apparent to Mrs. Rea during the war, when she served in a volunteer capacity as Field Director of the Walter Reed Hospital in Washington.

Terms under which the scholarships will be available to doctors are now under consideration by the Board of Directors of the Post Graduate Medical School. It is understood that assignment will be based on the recommendations of state and county medical associations. The records of doctors for public service in the communities will also be an important factor in the choice, together with the usual professional qualifications.

In addition to Mrs. Rea's gift, Mr. James C. Brady of New York has given $50,000 towards the first $1,000,000 and has pledged $125,000 to help in raising the $2,000,000. Mr. Vincent Astor has given $50,000 and has promised an additional $75,000 after the first $1,000,000 has been raised. The total amount of the fund at the present time is $329,000.

BOSTON AND MASSACHUSETTS.

THURBER MEDICAL ASSOCIATION.—The Thurber Medical Association held an influenza clinic on April 1 at the Nurses' Home of the Draper Memorial Hospital. The hygienic and administrative aspects of the prophylaxis and control of influenza were discussed by Dr. Donald B. Armstrong, executive officer of the Framingham health community demonstration. Dr. John M. French of Milford delivered an address on the use of bacterial vaccines in the prevention and treatment of influenza. There followed a general discussion of the causes of influenza and methods of treatment.

CASES OF HOOKWORM AT CAMP DEVENS.—Three men of the Regular Army troops stationed at Camp Devens have developed well defined cases of hookworm disease and are confined to the camp hospital for treatment and observation. The development of this disease in this latitude and climate is very unusual. No one of the three men afflicted was born or has seen service in tropical countries, where the hookworm malady is supposed to originate.

There are at present forty men with various diseases confined to a section of the original base hospital plant, which is being utilized as a camp hospital. The rest of the institution, capable of caring for more than two thousand patients, is closed.

THE BOSTON LYING-IN HOSPITAL.—The following statistics relative to the work of the Boston Lying-In Hospital have been published in the condensed annual report for the year ending December 31, 1919. There were admitted to the hospital 1,048 patients, of whom 92 per cent. were married. About one-fifth of these were free cases: the remainder paid on an average less than one-half of the cost of their care. The mortality was 20, or 1.9 per cent. The average daily number of adult patients admitted was 40, with an average stay in the hospital of 15.6 for delivered patients. Eight hundred and ninety babies were born and cared for.

In the Out-Patient Department, 6,992 visits were made to the pre-natal clinics by 2,698 patients. The importance of this service with the home supervision of the District Nurses and the Medical-Social Service Nurses cannot be overestimated. It means that practically all of the patients are first seen in these clinics, where any abnormal condition may be recognized and corrected if possible, or proper preparation made to meet the situation before the patient goes into labor. It is the means of saving many lives and relieving much suffering. One thousand two hundred and thirty-two patients were attended at confinement in their homes, involving about 12,400 visits by attending house officers and externes. There were 1,245 babies born and cared for by the Out-Patient Department.

Eight house physicians were given six months' intensive obstetrical training, 187 medical students were given special training, and 66 nurses with special obstetrical training were graduated.

During the last forty-seven years, 26,839 patients have been treated in confinement in the hospital; 26,156 babies have been born or cared for in the hospital; 51,028 patients have been attended in their homes, and 50,599 babies have been born or cared for in homes. Diplomas have been granted to 811 nurses and to 275 house officers. Four thousand eight hundred and fifty-three medical students have been given special training.

WEEK'S DEATH RATE IN BOSTON.—During the week ending April 10, 1920, the number of deaths reported was 255 against 292 last year, with a rate of 16.45 against 19.12 last year. There were 42 deaths under one year of age against 50 last year.

The number of cases of principal reportable diseases were: Diphtheria, 30; scarlet fever, 65; measles, 210; whooping cough, 80; typhoid fever, 1; tuberculosis, 43.

Included in the above were the following cases of non- residents: Diphtheria, 7; scarlet fever, 23; measles, 1; tuberculosis, 7.

Total deaths from these diseases were: Diphtheria, 5; scarlet fever, 1; measles, 3; whooping cough, 7; tuberculosis, 12.

Included in the above were the following non-residents: Diphtheria, 2.

Influenza cases, 13; influenza deaths, 2.

Bequests to Medical Institutions.—By the will of the late Mr. Grant Walker of Weston, the sum of $10,000 has been bequeathed to the Free Hospital for Women and $5,000 to the St. Luke's Home for Convalescents in Roxbury.

Red Cross Executive Secretary.—Mr. Seymour H. Stone has been appointed executive secretary of the Boston Metropolitan Chapter of the Red Cross. Mr. Stone has had a wide experience as a social worker. For several years he assisted the Boston Children's Aid Society. After serving in the Spanish War, he became superintendent of the New Jersey State Board of Children's Guardians. In 1904 he returned to Boston to take charge of the work of the Boston Children's Friend Society and in 1909 he became secretary of the Boston Tuberculosis Association. During the war Mr. Stone was engaged in War Camp Community Service work as supervisor for New England In the summer of 1918 he entered the service of the American Red Cross overseas and was a member of the tuberculosis department in Italy.

Gifts to Medical Institutions.—The following bequests were made in the will of the late Mrs. James A. Woolson of Cambridge: $5,000 to the New England Deaconess Hospital, $3,000 to the Woman's Aid Association of the Cambridge Hospital, and $1,000 to the Cambridge Visiting Nurse Association. At the death of her husband, a bequest was made to the Cambridge Hospital for adding a wing to the building. As this sum was found to be insufficient, a sum not to exceed $10,000 was provided by the will of Mrs. Woolson to make up the deficit.

Greater Boston Medical Society.—The annual dinner and dancing party of the Greater Boston Medical Society was held on April 13 at the Hotel Somerset. Dr. Albert A. Shapira presided, and more than one hundred guests were present. The speakers of the evening included Dr. Louis Arkin, and Dr. Philip Castleman, president of the society.

Massachusetts Homeopathic Society.—The eightieth annual meeting of the Massachusetts Homeopathic Society was held on April 14 at the Homeopathic Hospital in Boston. During the morning, special clinics were held in the Out-Patient Department, at which interesting cases were presented and methods of treatment demonstrated.

During the business meeting of the afternoon committee reports were submitted by Dr. Herbert C. Clapp for the fund committee; Dr. Wesley T. Lee, legislative; Dr. Harry J. Lee, registration and statistics; and Dr. David L. Belding, elections. Dr. Frank A. Gardner, necrologist, also made a report.

Among the papers read were, "The Relation of Certain Factors of Hospital Administrational Work," by Dr. H. M. Pollock, superintendent of the Massachusetts Homeopathic Hospital; "Gastric Ulcer," by Dr. Charles T. Howard, surgeon of that hospital; and "Focal Infection, Some Complications and Sequelae," by Dr. W. F. Phillips, physician at the hospital.

At the annual dinner, held in the evening, Dr. Wesley T. Lee, president, addressed the society on "The Demoralization of Medical Practice."

NEW ENGLAND NOTES.

Health Department of Maine.—The Health Department of Maine has been developed and reorganized during the past winter. Under the direction of Dr. Leverett Dale Bristol as health commissioner, with a staff of thirty paid workers and an advisory council, it has become thoroughly equipped to care for the physical well-being of the people of Maine. Modern health legislation has been introduced, scientific investigation organized, and systematic training of the people themselves in the principles of right living has been undertaken. A building on the east side of the Kennebec river in Augusta has been given over to the department of health and is the center of its administration. This building has two laboratories and several offices, yet the growing needs of the department have made it necessary to plan additions over the north and south wings. There are branches of the health department, under the direction of the local health officers, in the cities and towns throughout the state. The local health officers are supervised by district health officers, of whom there are eight, one in charge of each of the eight districts which have been organized.

Dr. Bristol, under whose supervision the local and district health officers carry on the work, has had extensive training and experience. He received the degree of Doctor of

Medicine at Johns Hopkins in 1907, and the degree of Doctor of Public Health at Harvard in 1918. He has been connected with the medical faculties of the universities of North Dakota, Minnesota, Syracuse, and Harvard, and has had a wide practical experience in his profession in hospitals and clinics and health departments in New York, Massachusetts, Connecticut, Minnesota, and North Dakota. He has been interested particularly in tuberculosis and cancer and has been officially associated with national, state, and local antituberculosis organizations. He is a member of the executive committee of the Maine Antituberculosis Association. Dr. Bristol holds the position of state registrar, and personally takes charge of the division of administration and of the division of vital statistics.

Other divisions of the health department are conducted under the general supervision of Dr. Bristol by division directors. The division of sanitary engineering takes care of the analysis of water, sewage, and dairy products and coöperates closely with the public utilities commission, which has charge of all the Maine water supplies. The diagnostic laboratory concerns itself with the work formerly done by the hygienic laboratory and has taken up additional lines of work, including free examination for tuberculosis, typhoid fever, infantile paralysis, cancer, and other diseases. Dr. A. G. Young, director of the division of communicable diseases, has served the health department for thirty-five years. Since its reorganization he has rendered invaluable service in preparing for the people of Maine information concerning the care, cure, and prevention of communicable diseases.

In recognition of the fact that coöperation with the public is necessary in order to gain effective results, the division of public education and publicity has been established in order to make expert knowledge available to the people. In this work the daily and weekly papers are coöperating in dispersing public health information. Other media for publicity work are a weekly news letter, a monthly Health News Bulletin, and a monthly scientific publication.

The public health council, of which Dr. Bristol is chairman, is the governing body of the state department of health. Its membership includes Dr. Sylvester J. Beach of Augusta, Mr. Hiram W. Ricker of Poland Springs, Dr. R. M. Small of Portland, and Mr. James O. Gulnac.

War Relief Funds.—New England War Relief Funds have announced the following amounts of total contribuations:

French Orphanage Fund	$579,761.87
Italian Fund	325,462.40
Argonne-Champagne Fund (closed)	10,674.50

Admission of Women to Medical Department of the University of Vermont.—Acting President G. W. Bailey of the University of Vermont and Dean H. C. Tinkham of the medical school have announced that women will be admitted to the medical department of the university next fall for the first time in its history. This action was decided upon by the board of trustees at the institution because of the great shortage of doctors throughout the rural districts of northern New England and New York state.

It is expected that although all courses will be open to women, few will take up surgery, the majority confining themselves to institutional and laboratory work and in studying children's diseases. There are a large number women in New England colleges who have had necessary preparation for this work.

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Correspondence.

A SEVENTEENTH CENTURY PRESCRIPTION.

We have received recently a copy of the following interesting letter written by Dr. William Avery in the year 1663:

"Reverent Courteous and much esteemed:—

"I have according to my weak understanding considered of your request to me concerning the poor lame man, but the Lord that is only wise, though in a gracious and gentle manner, hath visited me so that I cannot come to your town at present. I do not understand what the malady is—whether it is a fistular or a cancer. If it be a fistular or foul ulcer it must have one way of dressing; but if it be a cancer it must be dressed another way. I fear it is a cancer and then sharp medicines will not prevail unless they be caustics and then there had needs be skilled hands to apply them. Actual cauteries is of all things considered most effectual and safest; yet it is very afflicting and is therefore not so frequently used. But if it be a fistular then it ought to be syringed with some restringent water, if it might be to the bottom to cleanse it. (Viz. take Verdigrease Alum and white copras of each an ounce made in fine powder, then take a quart of white wines or Smiths water being clarified, put in the ingredients into the water and make it boil a little, take off the scum with a feather and let it cool and then put the clear into a glass to syringe into the orifice and use that which is thick to dress the proud flesh withal and if you use it hot it will suppress it the more but if it be a cancer this will prevail very little. You may also make an ointment to dress the sore after it is washed: take Verdigrease in fine powder one ounce and then take as much resin and beeswax as a nutmeg of each of them, put them into a skillet and melt them, then take clear hogs suet 4 oz., put in that and melt it also, then put in your Verdigrease—beware it boils not over—and let it be mixed, then put in 2 oz. Turpentine, melt that and it is done. This ointment you will find very little inferior to that which is so highly considered by Surgeons called Ung. Epistolorum; with this you treat the sore after it is washed—or with the ointment called Egiptian it is made with Verdigrease honey and vinegar boiled to a red ointment but in these things I speak at a venture not knowing the case that I answer to but if anything had been propounded to consideration I should have given my advise though but weak or if I could have had more particular knowledge of the disease I might speak more fully to it but in the meantime I hope that which has been said will be no means to hinder the good woman from doing the best she can in the case that is of such necessity and though I can give no better advice at present yet I shall desire the Lord to direct her and bless her endeavors and rest yours to my favor though unworthy to be expressed.

William Avery.

from Dedham this 5th of the 3rd. 1663."

NARCOTIC DRUG BILLS IN NEW YORK LEGISLATURE.

New York, April 8, 1920.

Mr. Editor:—

The postponement of the hearing on the narcotic drug bills now before the New York Legislature until later in the session, should give the physicians of this state, as well as the public, an opportunity to be heard in regard to this form of legislation. One of these bills prohibits the fifteen thousand physicians of this state from treating cases of drug addiction otherwise than under enforced institutional restraint.

This bill has the endorsement of the State Medical Society given by its House of Delegates, a body which, as is well known, is not a scientific but a legislative one. This recommendation is founded upon the findings of a committee appointed a year ago by the state society, none of the members of which committee can be credited with any special knowledge on the subject of drug addiction. In addition, almost all those consulted by this committee and upon whose testimony they have based their conclusions, are interested in correctional, curative, or public medical institutions.

Drug addiction is now pretty definitely classified as a disease rather than a habit or a vice which it was claimed to be originally by those now interested in its institutional treatment. This being the case, physicians have been urged by those competent to advise them on the subject to study this disease and to treat these patients as they would those suffering from any other form of disease. On the other hand, repressive legislation of all kinds tends to force sufferers from drug addiction, whether curable or not, into the hands of institutionalists or into illicit channels of supply.

One of the methods most calculated to bring about these conditions is that of including drug addiction among the contagious diseases and compelling physicians everywhere throughout the state to report it to the authorities as is now done only in New York City.

A law of this kind coupled with the ruling already laid down defining a drug addict in this state as any one to whom morphine has been administered during a period of thirty days, would extend the control of the sanitary authorities to every case of sickness, acute, chronic, or incurable, in which this drug was thus employed. On this account alone any law of this character should be opposed, not only by the physicians of the state, but by the general public as well.

John P. Davin, M.D.

117 West 76th Street.

NO PHYSICIAN NOR SURGEON AS YET IN THE HALL OF FAME.

Mr. Editor:

Soon there will be the fifth quinquennial election to the Hall of Fame. The first took place in 1900 immediately after the funds had been given anonymously for the building of a permanent monument to the men and women who had contributed most to the nation's well-being and culture. According to the constitution drawn up at the time, it was agreed that at the first election fifty national figures in art, science, and history should be chosen and that thereafter five were to be added every five years.

The method of procedure in placing a man or woman's name on a tablet in the Hall of Fame is such as to allow no question or doubt as to the person's eligibility. The senate of the New York University, which is made up of the Dean and senior professor of each of the university schools with the presidents or other representatives of each of the great theological schools in or near New York City, chooses the electors. There are a hundred of these. Every state in the Union is represented by at least one man. These hundred men are chosen by virtue of their eminence in some branch of national culture. They fall into seven main divisions: authors, presidents of universities or colleges, scientists, professors of history, jurists, high public officials or men or women of affairs, and editors. When the names are sent in to the Senate of the University they are considered on the basis of constitutional qualifications. Not the least important of these qualifications is the one requiring that the nominee must have been deceased at least ten years.

It is with delight that we see, I believe for the first time, the name of a physician among the electors, the chosen one being Dr. Charles H. Mayo of Rochester, Minn. Perhaps this is a good omen and indicates that one of our own profession may at last be among the immortals. It is true that Oliver Wendell Holmes was a physician, but his name has been chosen for the Hall of Fame as belonging to Group I, authors, of which there are now 14. Group II are educators and number 4; Group III, preachers and theologians, 4; Group IV, philanthropists and reformers, 3; Group V, scientists, 5; Group VI, engineers and architects, none; Group VII, physicians and surgeons, none; Group VIII, inventors, 4; Group IX, missionaries and explorers, 1; Group X, soldiers and sailors, 1; Group XI, lawyers and judges, 4; Group XII, rulers and statesmen, 11; Group XIII, business men, none; Group XIV, musicians, painters, sculptors, 2; Group XV, eminent men outside of classes mentioned, none.

William T. G. Morton, the discoverer of ether anesthesia, had once been proposed under Group VII, but failed in the election. I do not know whether or not the constituiton of the Senate of the New York University permits a renomination. I hope there will be no barrier to renominating the "inventor and revealer of anesthetic inhalation, before whom in all time surgery was agony,"* and of whom Sir William Osler speaks as follows in his "Man's Redemption of Man:" "On October 16, 1846, in the amphitheatre of the Massachusetts General Hospital, Boston, a new Prometheus gave a gift as rich as that of fire, the greatest single gift ever made to suffering humanity. The prophecy was fulfilled—'neither shall there be any more pain;' a mystery of the ages had been solved by a daring experiment by man on man in the introduction of anesthesia."

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* From a monument erected to his memory at Mount Auburn, Cambridge, Mass.

The next two greatest figures in American medicine and surgery are perhaps Ephraim McDowel and J. Marion Sims. McDowel performed the first rational and deliberate ovariotomy, which he did in 1809, and of course, without an anesthetic; his patient living for 32 years after the operation. As is well known, J. Marion Sims (1813-1883) gained for himself a national and international reputation by his invention of the speculum as an instrument for the treatment of pelvic diseases in women, and by his perfecting the plastic operation in the vagina for the relief of vesical fistulae.

The nominations must be sent in to the Senate of the New York University, University Heights, New York City, before May first. Besides erecting the tablet in the Hall of Fame, the Senate of the New York University is now considering collecting the works, where it is possible, of all the men and women who have thus been honored by the nation. They hope in this manner to create a valuable "Americana," open for study and inspection.

I am sending this letter to as many of our American medical journals as possible so that each and every American physician who has a just pride in his profession at heart may do his share to see that a recognition to medical and surgical science equal to that of other professions is given at last. While there may be other great physicians and surgeons in the past generations who have distinguished themselves so as to be worthy to be classed with "America's Greatest," I venture to say none has surpassed the achievements of Morton, McDowel, and Sims. These were real pathfinders in science and added to human happiness and well-being and the glory of the American medical profession.

Let every American physician send one, two, or all three of these names to the above mentioned address of the Senate of the New York University, stating that this is his choice of America's great men for nomination for the Hall of Fame.

S. Adolphus Knopf, M.D.

UNITED STATES CIVIL SERVICE EXAMINATION

Physician, Panama Canal Service, May 5 and July 7, 1920.

The United States Civil Service Commission announces an open competitive examination for physician, on the above dates, at the usual places of examination. Vacancies in the Panama Canal Service at the salaries indicated, and in positions requiring similar qualifications, at these or higher or lower salaries, will be filled from this examination, unless it is found in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

The entrance salary is $200 a month; promotion may be made to $225, $250, $275, $300, and to higher rates for special positions.

Both men and women, if qualified, may enter this examination, but appointing officers have the legal right to specify the sex desired in requesting certification of eligibles. For the Panama Canal Service male eligibles are desired.

Applicants must be unmarried; must have graduated from a recognized medical school whose graduates are eligible for commission in the United States Army; and must have had at least one year's postgraduate hospital experience.

Statements as to training and experience are accepted subject to verification.

Applicants must have reached their twenty-second but not their thirty-first birthday on the date of the examination. Age limits do not apply to persons entitled to preference because of military or naval service.

Applicants must submit to the examiner on the day of the examination their photographs, taken within two years, securely pasted in the space provided on the admission cards sent them after their applications are filed. Proofs or group photographs will not be accepted. Photographs will not be returned to applicants.

Before being permitted to sail for the Isthmus appointees must undergo a rigid physical examination by a designated physician after the appointment has been actually issued. There will be no charge for this examination, but the appointee must pay his transportation to the place of examination. The official physicians are located at the ports of departure and in a number of the large cities throughout the United States.

This examination is open to all citizens of the United States who meet the requirements.

Applicants should at once apply for Form 1312, stating the title of the examination desired, to the Civil Service Commission, Washington, D. C., or to the Secretary of the United States Civil Service Board at the principal cities of the United States. Applications should be properly executed, including the medical certificate, but excluding the county officer's certificate, and filed with the Commission at Washington, D. C., in time to arrange for the examination at the place selected by the applicant.

SOCIETY NOTICE.

Essex North District Medical Society.—The annual meeting of the Essex North District Medical Society will be held in Russell Hall, Y. M. C. A. building, 40 Lawrence Street, Lawrence (Tel. 1260) Wednesday, May 5, 1920.

Dinner will be served at 12.30 o'clock, sharp.

After the dinner, the business meeting will occur at 1.45.

The report of the committee on lodge practice will be discussed.

Papers will be presented as follows: Howard A. Streeter, M.D., A. A. Surgeon, United States Public Health Service, and Chief, Sub-division of Venereal Diseases, Department of Public Health of Massachusetts, upon "The Massachusetts Venereal Disease Program." (40 minutes.)

Alfred Worcester, M.D., of Waltham, President of the Massachusetts Medical Society, has accepted an invitation to be our guest. He will speak upon the matter of compulsory health insurance. (20 minutes.)

General discussion is invited (5 minutes each).

Meeting of the Censors will be held at Hotel Bartlett, Main Street, Haverhill, (Tel. 8710) on first Thursday in May and in November, at 2 p.m., sharp. Candidates for admission to the Society should present their diploma to the Secretary of the Society two weeks in advance.

Will each Fellow invite worthy non-members to confer with the Secretary?

J. J. O'Sullivan, M.D., *President*,
J. Forrest Burnham, M.D., *Secretary*,
301 Essex St. (Room 411), Lawrence, Mass.

The Boston Medical and Surgical Journal

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THE PRODUCT OF A UROLOGICAL CLINIC.

By William C. Quinby, M.D., Boston.

Following the precept so admirably laid down by Dr. E. A. Codman in his warm advocacy of an efficient End Result System for surgical patients, such a system has been in use at the Urological Clinic of the Peter Bent Brigham Hospital since this clinic was started in July, 1916. Effort has been made to follow the career of each house patient for at least two years after discharge from the hospital. The present report deals, therefore, with those patients treated during the last half of 1916 and during the whole of 1917. It has not yet been possible, because of the work involved, to follow up ambulatory patients in the Out-Door Department, except in those instances where such patient was previously in the hospital ward; so that in this respect the report does not cover all the work of the clinic.

URETERAL CALCULUS.

1. Woman, No. 4839, aged 58, single, 5-vi-16. Patient entered complaining of pain in left lower abdomen, which had been supposed to be due to a stone in the ureter or kidney. On examination no evidence of stone could be found. Result: 11-vii-18. Has had no further attack, and is quite well, except for chronic indigestion which, she says, she has had all her life.

2. Woman, No. 4871, aged 39, married, 11-vi-16. Question of right nephrolithiasis. Investigation failed to demonstrate stone Result: 1-vii-18. Patient is free from any symptoms referable to kidney since discharge. She has had one child since then, and following labor has had some soreness in the region of the right kidney, but no attacks similar to those experienced before her entrance to the hospital. She complains now of shortness of breath and pains in extremities, especially in arms. Referred to Medical Department for cardiac condition.

3. Man, No. 5432, aged 33, married, 21-ix-16. Question of renal calculus. Patient was discharged after one day, as examination failed to confirm diagnosis. No further data.

4. Woman, No. 7043, aged 39, married, 16-vii-17. Pain in back for twenty years. Question of renal stone. Sent for urological investigation. No stone or renal disease was found on examination. Patient was discharged five days after entrance. No further data.

5. Man, No. 6166, aged 21, single, 29-i-17. Complaint: Sharp pain in right iliac fossa. Question of appendicitis or renal stone. Cystoscopy showed no evidence of stone. Further observation failed to find signs of appendicitis. Patient was discharged on seventh day. No further data.

6. Man, No. 5571, aged 28, married, 14-x-16. Question of renal stone. No operation as investigation failed to demonstrate stone. Patient was discharged after twelve days. Result: 19-vi-18. Patient has had no trouble similar to that which caused his entrance to the hospital since discharge. He is working continuously and he has no pain. Urine normal on examination.

7. Man, No. 5720, aged 25, 10-xi-16. Pain in region of left kidney. Question of ureteral stone. No operation. Impossible to demonstrate stone. Urine normal. Patient was discharged six days after admission. No further data.

8. Man, No. 7062, aged 36, married, 18-vii-17. Question of ureteral calculus. Cystoscopy. No stone could be demonstrated. Patient was discharged seven days after entrance. Result: 27-vi-18. Letter from patient states he has been in good health since discharge.

9. Man, No. 5949, aged 36, 23-xii-16. Question of hematogenous infection of kidney, or of ureteral stone. No operation. X-ray negative. Urine contained blood on entrance. Symptoms subsided under expectant treatment. No further data.

10. Man, No. 7067, aged 39, single, 18-vii-17. Ureteral calculus. Stone passed before entrance. Question of renal tuberculosis. Cystoscopy showed lacerated ureteral orifice. Pathologist reports no tuberculosis. Patient discharged six days after entrance. Result: 16-vii-18. Has had no pain since discharge. The urine is normal.

11. Man, No. 5940, aged 27, married, 21-xii-16. Question of stone in the ureter. It was impossible to find a stone. Renal function normal. Discharged eight days after entrance. Result: 22-vii-18. Since leaving hospital patient has had one stone removed from urethra, but has otherwise been well.

12. Man, No. 5556, aged 36, 12-x-16. Question of stone in ureter. Exploratory laparotomy. No stone or abnormalities found in ureter. Appendectomy. No complications. Patient was discharged thirteen days after operation. Result: 19-i-18. Patient is well and has had no symptoms since operation.

13. Man, No. 6540, aged 29, single, 3-iv-17. Entered complaining of abdominal pain on the right side thought to be due to appendicitis, but found to be caused by nephrolithiasis. No operation. Stone was passed after cystoscopy and catheterization of ureter. Patient was discharged on the eleventh day. Result: 15-vii-18. Patient has had no symptoms of urinary difficulty since discharge. The urine is normal in all respects.

14. Woman, No. 6538, aged 60, married, 3-iv-17. Stone in left ureter. No operation. Cystoscopy. Injection of papavarin and liquid vaseline into ureter. The stone was of such size that the patient should pass it. Patient was discharged after thirteen days, and a short time later passed stone. Result: 15-vii-18. In answer to letter patient states that she has had no recurrence of trouble.

15. Man, No. 7589, aged 49, married, 25-x-17. Ureteral calculus Cystoscopy showed definite evidence of cystitis with edema of right orifice. Calculus 2 mm. in size removed by intravesical instruments. No complications. The patient was discharged seven days after entrance. Result: 25-vii-19. In reply to letter the patient states that he is well and that old trouble has not returned.

16. Man, No 7791, aged 44, married, 4-xii-17. Ureteral calculus. Right ureterotomy with removal of stone. Stone could not be moved upward because of slight thickening and constriction of ureter. No complications. Patient was discharged eight days after operation. Result: 17-xi-19. Patient writes that he has felt well since operation, but that last summer he had a severe attack lasting two days, when he passed four stones and a little gravel.

17. Man, No. 7312, aged 27, single, 3-ix-17. Bilateral ureteral stone. Right uretero-lithotomy and later dilatation of left ureter. There was some evidence of peri-ureteral inflammation. Stone 10 cc. below iliac vessels was milked upward. Three fine stitches were taken in ureter. No urine leaked from wound, which healed by first intention. Patient was discharged nineteen days after operation. He returned in two weeks with stone he had passed from left side. No further data.

18. Man, No. 6062, aged 49, married. 11-i-17. Stone in left ureter removed by ureterotomy. No complications. Wound healed on fifth day. Patient was discharged on tenth day, urine still showing occasional leucocyte. Result: 5-vii-18. Except for a pain in his back for a few weeks, the patient has been entirely well. The urine is normal. 9-v-19. Patient's daughter reports that pain in the back has returned. Question as to whether stones are reforming. 20-xi-19. Daughter reports that father's condition is now satisfactory in all respects.

19. Man, No. 7592, aged 29, 21-vi-16. Stone in left ureter removed by ureterotomy. Suprapubic cystotomy. An unsuccessful attempt to locate stone in ureter necessitated opening bladder and passing catheter up ureter. The stone was then removed. Complications: On two occasions the patient had sharp rise in temperature, and the vesical sinus was slow to heal. The patient was discharged on the eighteenth day. Reëntry: No. 4921, 26-x-17. Acute prostatitis and acute epididymitis. The patient was entirely well until two weeks ago. Then had pyuria, terminal hematuria, pain, and frequency. No residual stones were found. Local and symptomatic treatment cured condition.

The patient was discharged about one week after reëntry. Result: 31-vii-18. Has no symptoms of trouble. The urine is normal.

20. Woman, No. 7767, aged 25, married, 28-xi-17. Stone in left ureter. Question of stone in right kidney. Complained of pain in left side. The stone was very low so that operation was first undertaken by opening the ureter through the vagina. The stone could not be removed by this route so that the ureter had to be opened above. By this route the stone could be felt but could not be pushed upward. It was therefore pushed on into the bladder. The wounds healed well and the patient was discharged on the fourteenth day, having previously passed the stone from the bladder. Result: 1-viii-18. Patient is well. Reëntry: 26-iii-19. Patient complains of dull pain in left side and x-ray shows two shadows in kidney region. Left nephrectomy. Convalescence complicated by tonsillitis; otherwise uneventful. Discharged with wound healed on fourteenth day after operation.

21. Man, No. 7321, aged 38, married, 5-ix-17, Left ureteral calculus. Cystoscopy impossible on one attempt. X-ray plate showed shadow. The patient refused further treatment and was discharged after three days, against advice. Result: 29-vii-18. Patient states that he has had no further trouble. The urine still contains pus.

In the first nine cases no stone could be demonstrated by any of the available methods. Although in a number of instances the patient has not replied to letters asking for news, it is not probable that any stones were overlooked, for in this case the chances are that the letter would have been answered. A stone which subsequently passed was not demonstrated on previous examination in Case 11. In Case 16, stones still continue to pass, but there is not yet sufficient reason for any operative interference on the kidney. Case 20 is a fair example of the difficulty encountered at operation when a ureteral stone is impacted in that portion of the ureter crossed by the broad ligament.

HEMATURIA.

Man, No. 5277, aged 32, 26-vi-16. Essential hematuria. No operation. Investigation failed to show cause for bleeding, which ceased on entrance to hospital. Patient was discharged on second day. Reëntry: No. 4954, 20-viii-16. Patient has had many attacks of bleeding since leaving hospital, but blood is not present now. Another examination failed to show source. Patient was discharged after ten days. Result: 11-xii-18. Patient had kidney removed at another hospital, and has since been well.

HYDRONEPHROSIS.

1. Man, No. 6367, aged 19, single, 5-iii-17. Large, left hydronephrosis due to anatomical variation of renal artery making pressure on ureter. Only symptom that of intermittent pain. Possible to make accurate diagnosis by pyelogram. Bipolar arrangement of renal artery found. Pressure relieved by plastic operation on pelvis and ureter. Vessel not cut. Complications: A good deal of nausea and distention for thirty-six hours. Temperature 101° on day after operation. Drain removed on eighth day, and wound healed at discharge from hospital on thirteenth day after operation. Result: 8-viii-19. Patient in good health. Urine normal. Left renal pelvis has contracted to about one-half the size found at operation. It is evident from the pyelogram that the drainage is better than before. The injection of twenty-five cc. caused no symptoms, however. Renal function normal.

2. Woman, No. 7386, aged 24, married, 17-ix-17. Diagnosis: Pelvic mass of unknown character; very poor renal function; bilateral hydronephrosis. Medical service could find nothing suggestive of Bright's disease, but felt that poor renal condition was due to the obstruction in the pelvis. The patient's condition was so poor that to attack the mass in the pelvis was out of the question until function of the kidneys had been improved. It was attempted on the 4-x-17, to relieve the kidneys by a bilateral ureterostomy. This operation failed because ureters were found to be densely involved in firm tissue of chronic, inflammatory nature. Result: Reëntered the hospital medical service several times but was never cured. Gradually became weaker and died on 22-x-18, after a short period of blindness.

It is possible that a bilateral nephrostomy would have succeeded in relieving the kidneys where the operation chosen failed.

NEPHRITIS.

1. Man, No. 5687, aged 59, married, 6-xi-16. A very sick man, complaining of severe headache, and urgent, frequent urination, was transferred from the Medical Service for investigation. There has recently been much loss of general strength and weight. Whites, 40,000. No fever. Investigation showed small amount of pus from right kidney. X-ray negative. Renal function bad on each side. Kidney one-fourth larger than normal at operation. Negative findings. Patient discharged one month after entering hospital. Died about six weeks after discharge. Only possible diagnosis that of chronic nephritis.

Operation was doubtless a mistake of judgment in this instance. But in the presence of a leucocytosis and evident pus coming from one side, it is hard to see how it could have been withheld.

NEPHROLITHIASIS.

1. Woman, No. 7236, aged 48, married, 18-viii-17. Renal calculus. Left pyelotomy. No complications. Patient discharged on tenth day after operation. Result: 24-x-19. Patient reported in reply to letter that she feels very well, and has had no trouble since operation.

2. Man, No 7391, aged 43, married, 18-ix-17. Bilateral renal stone. Right pyelotomy and nephrotomy. Incision made through lower pole of kidney onto stone, supported by finger through the pyelotomy incision. Anesthesia taken badly. Complications: Definite bronchopneumonia with fever and sputum. Temperature normal after fourteenth day. Patient discharged on fiftieth day after operation. Reëntry: 23-v-18. Patient has felt well except for occasional renal colic on untreated side. Left pyelotomy. No complications. Wound healed on twelfth day. Result: 1-viii-18. Patient feels fine. Urine contains a few shreds.

3. Man, No. 4960, aged 39, married, 27-vi-16. Stone in kidney. Right pyelotomy. No complications. Patient was discharged fourteen days after operation. Result: viii-19. Patient returned to the Medical Department of the Out-Door Department because of indigestion characterized by vertigo, choking, etc. He has had no evidence of recurrence of stone. The urine is normal. 3-x-19. States he has been well since middle of September.

4. Man, No. 5120, aged 31, married, 24-vii-16. Stone in kidney. Left pyelotomy. Stone pushed from calyx into pelvis. Kidney appeared normal. No complications. Patient was discharged thirteen days after operation. Result: 27-vii-18. Patient reports. He has felt well since operation, and has had no pain at any time. Urine normal on examination, and scar well healed.

5. Man, No. 5186, aged 29, married, 7-viii-16. Renal stone. Urine slightly infected. Right pyelotomy. No complications. Patient was discharged nine days after operation. Result: 22-vii-16. Letter from patient states he is very well.

6. Man, No. 5527, aged 35, married, 6-x-16. Stone in the kidney. Right pyelotomy. No complications. Patient discharged on fourteenth day after operation. Result: 31-vii-18. Patient is in good health.

7. Woman, No. 6191, aged 55, married, 1-ii-17. Patient was found to have albuminuria, due to a stone in right kidney pelvis. She had never had any pain in region of kidney. Right pyelotomy. Ureter thickened; pelvis partially intra-renal. Drainage removed on third day and stitches on sixth. Complications: A very slight amount of pus in urine on discharge on eighteenth day. Result: 7-vii-18. Letter from patient states her general health is excellent.

8. Man, No. 6294, aged 46, married, 19-ii-17. Bilateral renal stone. Stone on right had passed into ureter, causing pain. Right ureterotomy. Removal of stone. Attempt to locate stone in left kidney proved unsuccessful. Complications: Both wounds became septic. Much nausea and vomiting. Temperature normal on the seventeenth day. Sinus on right closed one month after operation. Patient was discharged thirty-two days after operation. Result: 17-xii-18. Patient has worked steadily and is entirely free from urinary symptoms. Reported at hospital today for rheumatic pain in shoulder. Urine slightly turbid with pus.

9. Man, No. 6472, aged 40, married, 22-iii-17. Renal stone. Left pyelotomy. Exploration of pylotomy wound, twenty-eight days after first operation. In the first operation drain was placed down to incision in pelvis, another below kidney.. In second operation inflammatory tissue at upper end of ureter was freed. Complications: Sinus did not heal after first operation. Patient discharged well on the fifty-ninth day after the first operation. No further data.

10. Man, No. 6841, aged 42, married, 6-vi-17. Left renal stone. Pyelotomy. Kidney was easily delivered, showing induration of fat at pelvis. Complications: Temperature as high as 103 until fourth day. Normal healing of wound. Patient was discharged on tenth day after operation. Result: 16-iii-18. Patient has been in excellent health. Cystoscope shows no evidence of disease, and the urine is normal.

The results of operation in this group of cases is excellent as a rule. In Case 2, the pulmonary complication was clearly the result of the anesthesia. Operation in Case 8 was followed by sepsis in the wounds. Also a tiny stone in a kidney otherwise normal could not be located. The slow healing in Case 9 was doubtless due to the too close apposition of the drain to the pyelotomy incision. No case has thus far shown recurrence of stone.

NEPHROPTOSIS.

1. Man, No. 6142, aged 24, single, 25-i-17. Complaint: Pain in right lumbar region and slight hematuria. Question of renal stone. Pain found to be due to nephroptosis and kinked ureter. No operation. Patient discharged on fourteenth day. Result: 17-vii-18. Patient is neurasthenic. Urine normal.

2. Woman, No. 6311, single, 23-ii-17. Complaint: Pain in right lower abdomen radiating upward to kidney region. Chronic appendicitis. Nephroptosis. Operation: Nephropexy and appendectomy. Appendix removed through inci-

sion for kidney. No complications. Patient was discharged on twelfth day after operation. Result: 24-iv-17. Well and able to walk several miles without pain. Urine normal. 9-vii-18. Patient writes that her health is excellent.

3. Woman, No. 6506, aged 51, single, 29-iii-17. Nephroptosis. Stone in kidney. Left pyelotomy. Nephropexy. Kidney freely movable and very low. Stone impacted in ureter at pelvic junction. No complications. Patient discharged on nineteenth day after operation. Result: 13-i-19. Patient states operation was successful. Wound slightly tender.

4. Woman, No. 6515, aged 22, single, 30-iii-17. Nephroptosis. Chronic appendicitis. Nephropexy and appendectomy. Appendix removed through same incision as that made for kidney. No complications. Patient was discharged on eleventh day. Result: 12-iii-19. Patient in good health. Had married and given birth to a nine-pound baby since operation.

5. Woman, No. 6719, aged 29, married. 11-v-17. Complaint: Severe pain in right upper quadrant. Question of stone in gall bladder or kidney. Patient is pregnant, and the kidney is very freely movable. Exploration of gall bladder. Nephropexy. Neither renal nor gall stone found. No complications. Patient discharged on fourteenth day after operation. No further data.

6. Woman, No. 6921, aged 20, single, 22-vi-17. Nephroptosis. Nephropexy and appendectomy. Appendix removed through wound made for kidney. No complications. Patient discharged on eighteenth day after operation. Result: 31-iii-19. Patient complains of pain in right lower abdomen. Right kidney is palpable midway between the costal margin and right iliac crest. Cecum is rather distended and palpable as a rounded cord.

7. Woman, No. 6968, aged 38, married, 2-vii-17. Nephroptosis. Nephropexy. Adhesions and scars on surface of kidney. Complications: Abscess on arm from hypodermic. Patient discharged on fourteenth day. 14-x-19, result only partially successful. Patient still has occasional pain in side, but is very fat and must work hard. Has much pruritus.

8. Woman, No. 7195, aged 39, widow, 10-viii-17. Nephroptosis. Chronic appendicitis. Nephropexy and appendectomy. Appendix removed through incision for kidney. No complications. Patient discharged on fourteenth day. No further data.

9. Man, No. 7619, aged 63, married, 1-x-17. Adhesions around gall bladder. Nephroptosis. Colecystectomy, and nephropexy. Kidney and ureter normal. Dense adhesions around gall bladder. Second incision removed gall bladder with kink at its neck. No complications. Patient was discharged on eighteenth day after operation, entirely free from pain in back. Result: 9-i-18. Local doctor reports that patient had an acute attack of abdominal pain, bloody vomit, and swelling of the legs, cardiac decompensation, and phlebitis. Patient died in this attack.

10. Woman, No. 6372, aged 30, single, 5-iii-17. Patient complained of attacks of pain in the left flank. Nephralgia due to nephroptosis. Nephropexy. The left renal pelvis held 17 cc., the right 5 cc. Distention caused pain identical with that present during attack. No evident abnormality on kidney surface. Kidney fixed in high position with silk sutures. No complications. Patient was discharged on fifteenth day. Result: 11-xii-19. Patient says that she is feeling well now, except for an occasional pain in her side of slight degree.

In Case 6 it is evident that operation failed to fix the kidney in its normal position. In its present position, however, the kidney is not movable and it is quite probable that the persisting pain is due to chronic constipation.

It might have been better judgment in Case 7 to remove the kidney, since it showed evidence of an old pyelonephritis. The patient's pain has been relieved but not entirely cured.

PYELITIS.

1. Woman, No. 4750, aged 30, married, 19-v-16. Acute pyelitis and pregnancy. No operation. Pus in urine on discharge. Patient discharged subjectively on fifteenth day after entrance, to the care of the prenatal clinic. Result: viii-16. Letter from patient says that she still has an occasional chill and vomiting spell. The baby has been born. No further data.

2. Woman, No. 5382, aged 20, 12-ix-16. Pyelitis; pregnancy. Left pyelotomy for infected hydronephrosis. Kidney found to be enlarged and studded with miliary abscesses. The pelvis was drained. No complications. The patient was discharged on twenty-seventh day after operation, with wound healed. No further data.

3. Woman, No. 5176, aged 25, married, 4-viii-16. Pyelitis. No operation. Right kidney found to be enlarged and low, and urine to contain pus. Fever and general condition improved under treatment by renal lavage. Patient discharged on thirteenth day. Result: 29-viii-16. Pelvic lavage. Urine normal. 12-ix-16. Patient feels entirely well. She has no pain, tenderness, dysuria, frequency, or hematuria Only complaint is that she tires easily.

4. Man, No. 5793, aged 26, 25-xi-16. Question of stone in right kidney, or of pyelitis. Impossible to demonstrate stone. Symptoms relieved by expectant treatment. Patient discharged on eleventh day. Result: 8-ix-18. Patient in Out-Door Department for pain in calves, etc. No further data.

5. Woman, No. 6747, aged 25, single, 17-v-17. Pyelitis. No operation. Cystoscopy. Patient discharged twelve days after entrance. Result: 12-vi-17. Pain in side relieved. No further data.

6. Man, No. 7053, aged 27, single, 17-viii-17 Bilateral pyelitis. No operation. Cystoscopy. Patient discharged fifteenth day after entrance. Result: 30-vii-18. Operated on two weeks ago for appendicitis. Wound not drained. Symptoms relieved. No further evidence of pyelitis found.

7. Woman, No. 7170, aged 27, married, 4-viii-17. Pyelitis. No operation. Expectant treatment relieved symptoms. Patient discharged five days after entrance.

8. Man, No. 7233, aged 34, married, 18-viii-17. Complained of being "generally run down." Had been in Philippines, where he had amebic dysentery. Investigation showed bilateral chronic pyelitis with considerable hydronephrosis and hydroureter. Urine normal except for considerable quantity of pus coming from each kidney pelvis. Culture from urine continuously sterile. No evidence of tuberculosis by guinea pig inoculation. Renal function 78 per cent. in two hours. Previous to above the patient had been investigated by Medical Service. Spinal fluid and blood serum were both negative for syphilis, and there was no abnormality to be found in the gastro-intestinal tract, nor could amebae be found in stools. Kidney pelves were injected with Dakin solution. There was no reaction to lavage and patient was discharged on following day. No further data.

9. Man, No. 5972, aged 41, married, 27-xii-16. Pyelitis; pyelonephritis; ureteritis. Exploratory pyelotomy. Kidney one-third larger than normal. Ureter much dilated. Patient discharged ten days after operation. Re-entry: 3-ix-17. Pyelitis. Nephrectomy. Kidney found to be of normal size, but unusually adherent at upper pole. Ureter thickened; wound drained. Complications: On tenth day one stitch infected. On the fourteenth day furuncle on right hip was incised. Discharged sixteen days after operation to Out-door Department, with slight cystitis still remaining. No further data.

10. Man, No. 7626, aged 55, married, 2-xi-17. Pain in left side of back found to be due to pyelitis. Treated by pelvic lavage on several occasions, with no relief. Reëntry: 12-ii-18. Left nephrectomy for pyelonephritis. Convalescence complicated by much bladder irritability and severe gastric upset suggestive of old duodenal ulcer. This could not be demonstrated by x-ray, however. Rapid loss of weight was not entirely regained. Discharged on the thirty-third day after operation. 1-v-18. Has been having regular bladder lavage in Out-Door Department. The pain in the back has not been present since operation. Nocturia only once. 9-viii-18. For some time patient has been staying about the same, or even losing ground. In spite of lavage, the urine has not cleared up. He says that on three recent occasions there has been a little blood at the end of the urination. By cystoscope there is little to be seen except diffuse cystitis. The left ureteral orifice is but a small dimple; the right seems normal except that it might be slightly raised above the bladder surface. A catheter on this side is obstructed at about 6 cm.: x-ray shows no stone. 2-i-19. Has been regular in attendance at Out-Door Department, but has continued to grow worse. During the past two months there has been increase in pain, shortening of time between the intervals of urination; and much terminal hematuria. The prostate is unquestionably badly infected, although there is no evidence of abscess. Massage does not control the situation even slightly. Therefore the bladder was opened above the pubis and the prostate removed by this route, with the exception of the posterior lobe. 10-xii-19. Today patient is still no better. He has continued throughout the past year to visit the clinic about once each week or two. He still is unable to work and shows considerable blood in urine.

11. Woman, No. 5543, aged 23, single, 10-x-16. Patient entered for urological investigation into cause of frequency of urination. Cystoscopy. No cause for ardor found except slight pyelitis. The urine is sterile at present. Patient was discharged after eighteen days. Result: 30-v-18. In answer to letter patient says that aside from getting tired and rather nervous at times, she has gotten along very well since her discharge from the hospital. Occasionally she has a little pain through back and side which is similar to pain she experienced after being cystoscoped. The pain does not last long enough to be troublesome. Her periods are still irregular, which makes her head feel badly when going over the time.

PYELONEPHRITIS.

1. Woman, No. 5575, aged 27. 16-x-16. Acute unilateral pyelonephritis. Severe pain with high fever. Pyelotomy for renal drainage. Edema in perirenal tissues. Kidney one-third larger than normal, and purplish in color. Partial decapsulation. Cortex studded with miliary abscesses. No complications. The patient was discharged on the fifteenth day after operation. Result: 21-xi-16. Gain in weight and general condition. Feels very well. 17-v-17. Renal function examined previous to appendectomy finds sterile urine from right and left kidney, and normal phenolsulphonephthalein output. 30-xi-19. Husband reports that patient has remained well.

2. Woman, No. 6101, aged 35, married, 17-i-17. Gall stones, pyelonephritis. Angulation

of ureter. Cholecystotomy. Fixation of kidney. The thickened, kinked ureter was relieved by by high fixation of kidney. The gall bladder was opened through the same wound. No complications. The patient was discharged nineteen days after operation. Result: 16-xii-18. Patient has been entirely well with no recurrence of pain since operation. There is entire absence of urinary symptoms, and the digestion is much better than it has ever been before. Patient is able to work hard without ill effects.

3. Man, No. 6397, aged 34, single, 9-iii-17. Fractured spine. Pyelonephritis. Vesical calculus. Patient of Dr. Cushing. No operation advised. Course in muscle training by Dr. Lovett. Neurological care by Dr. Taylor. Bladder lavage and extraction of calculi by Dr. Quinby. Patient remained in the hospital about five months. Result: vi-18. Patient has left Boston and is under the care of Dr. Barney, who has removed a large, calculous, pyonephrotic kidney.

4. Woman, No. 7025, aged 61, widow, 12-vii-17. Pyelonephritis and renal stone. Pyelotomy for stone. Kidney showed an enlarged double pelvis. One or two nodular areas in lower pole of organ. Complications: Patient had slight intermittent fever for nine days. Wound healed well. Discharged on twenty-second day after operation. Result: vii-18. From report of daughter, patient is having some symptoms of cystitis, making it probable that although the stone in the kidney has been removed. the infection has not been cured.

5. Man, No. 7519, aged 25, 13-xi-17. Pyelonephritis. Right nephrectomy. (Congenital aplasia.) Easy uncomplicated operation. Stitches out on sixth day and wound healed well. No complications. Patient discharged on twenty-second day after operation. Result: 30-xi-18 Patient entirely normal except that he is very neurasthenic.

6. Woman, No. 7722, aged 38, married, 19-xi-17. Right pyelonephritis with stone. Nephrectomy. Kidney densely adherent. Wound closed without drainage. No complications. Patient discharged on fifteenth day with slight remaining cystitis. Result: 18-xi-19. Has made a perfect recovery. Weighs twenty-five pounds more than when operated on.

7. Woman, No. 5776, aged 50, married, 22-xi-16. Infection and stone in right kidney. Nephrectomy. Kidney appeared to be aplastic. No complications. Patient discharged on seventeenth day after operation. Result: 4-vi-18. Patient comes to report. She has gained weight and is entirely well. Phenolsulphonephthalein excretion 60 per cent. Urine normal.

8. Woman, No. 6201, aged 33, married, 4-ii-17. Pyelonephritis. Hydronephrosis. Left nephrectomy. Kidney densely adherent. Last rib resected. Impossible to isolate pedicle. Necessary to dress wound. Stitches out and wound healed on ninth day. Patient discharged on fourteenth day after operation. Result: 15-vi-19. Patient reported at hospital. Has borne a child since operation. Health normal.

9. Woman, No. 6266, aged 45, widow, 16-ii-17. Pyelonephritis with stone. Left nephrectomy. The kidney was badly infected. The stone was found low in the pelvis. The ureter was dilated and very friable. Rupture with slight wound soiling. Complications: Some fever for about three days. Discharged on twenty-fourth day with wound healed except for a very small sinus. Result: 28-iii-17. Wound entirely healed and urine nearly free from pus. Discharged from Out-Door Department as well. No further data.

Case 1 may perhaps better be classed as an instance of acute hematogenous infection of the kidney. The very acute clinical picture demanded operation, and although it is hard to explain the effect of mere drainage of the pelvis and decapsulation, nevertheless recovery in this instance was perfect.

The poor result in Case 4 is doubtless due to a mistake in surgical judgment: the kidney should have been removed. But it is very hard at times to estimate accurately the relative importance of the two factors, stone and infection, in the causation of symptoms.

Cases 4, 5, and 7 illustrate the propensity with which a kidney showing a developmental anomaly becomes later the seat of disease. In the first instance there was found a double pelvis, and in the latter two the kidney was very small and showed fetal lobulations, with proportionate small caliber of the renal vessels.

PYONEPHROSIS.

1. Woman, No. 5642, aged 60, married, 25-x-16. Pyonephrosis. Incision of large perinephritic abscess followed by nephrectomy twenty-five days later. No complications. Pathologist's report: Tuberculosis. Patient discharged nineteen days after second operation. Result: 24-vi-18. Patient well. Slight weakness of scar.

2. Woman, No. 5789, aged 23, married, 24-xi-16. Pyonephrosis. Attempted nephrectomy. Necessary to stop because of poor condition and severe hemorrhage from adhesions surrounding kidney. Second stage nephrectomy five days later. A short, easy operation. Eight days later incision of ischiorectal abscess. No complications, except that of ischiorectal abscess. Patient was discharged forty-four days after

admission, and twelve days after third operation. Result: 29-viii-18. Patient has gained fifty-seven pounds, and has no symptoms. The urine still contains a little pus and some bacteria.

3. Woman, No. 5560, aged 42, single, 12-x-16. Pyonephrosis with stone. Nephrectomy. Kidney was found to be twice normal size, diffusely fluctuant. No complications. Patient was discharged on seventeenth day after operation. Result: vii-18. Well in regard to urinary difficulty. The urine is normal. Advised to enter hospital for correction of uterine procidentia.

4. Woman, No. 5989, aged 47, single, 30-xii-16. Renal stones. Pyonephrosis. Slight cystitis. Nephrectomy. Kidney formed a mass twenty cm. long. Peritoneum had to be dissected from the anterior surface of it. No complications. Patient was discharged healed on sixteenth day. Result: 25-vii-17. On examination, patient seems to be entirely normal. She complains, however, of several vague, abdominal pains.

5. Man, No. 6374, aged 54, married. 5-iii-17. Renal stone. Pyonephrosis. Previous unsuccessful attempt to remove kidney four years before entering hospital. Left nephrectomy. Hard and lengthy operation. Much perineal scar tissue. Necessary to resect last rib. Subcapsular nephrectomy. Closure of wound not entirely satisfactory because of old scar. No complications. Patient discharged on seventeenth day. Result: viii-18. Patient has been relieved of all symptoms. Urination normal, and urine free from pus.

6. Man, No. 6421, aged 44, single, 14-iii-17. Bilateral pyonephrosis. Question of polycystic kidney. No operation. Patient first on medical service and then transferred for emergency operation, which he refused. Patient died at home, 30-iii-17. No autopsy.

7. Man, No. 6585, aged 53, married 11-iv-17. Pyonephrosis. Perirenal abscess. Gangrenous cystitis. Entered hospital acutely sick and evidently septic. Temperature 104, pulse 90, respiration 28. Three years ago there were evident signs of disease in the right kidney, which have not been entirely cleared up at any time since. Six days ago the present attack began with pain in the loin, fever, vomiting, and partial suppression of urine. Under gas-oxygen anesthesia a large perirenal abscess and a disintegrated kidney were quickly drained. The patient died five days later with rising pulse and temperature, and signs of general sepsis. No autopsy permitted.

8. Man, No. 5071, aged 30, single, 14-vii-16. Perinephritic abscess. Question of pyonephrosis. Drainage of renal abscess. Complications: Slow healing of sinus which was still present on discharge on twenty-third day after operation. Result: 15-xii-16. Patient still discharging urine through sinus. No further data.

The result of operation in cases showing so severe disintegration of the kidney as do this group, is often brilliant. Whenever the condition has persisted to the point of generalized infection with septicemia, however (as in Cases No. 6 and No. 7), death usually occurs in spite of relief of the local condition. In Case No. 8, it is possible that a mistake in judgment was made in allowing the patient to leave the hospital before the possible need of nephrectomy could be decided. The presence of a urinary sinus in the loin five months after operation would suggest the advisability of further investigation.

(To be continued.)

SOCIAL SERVICE AND THE CLINIC.

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A modern medical clinic without a social service department is an anachronism. It is necessary no longer to urge the institution of a social service department as an integral and co-ordinate unit of every general hospital and clinic. It has proved its worth by taking over certain duties necessary but distasteful to the physician, and by adding that important link of after-care to the diagnosis and scientific treatment which have been provided in the hospital or clinic.

A further and related field has developed around the amelioration of home conditions and the investigation of contacts discovered in the course of the patient's post-hospital and post-clinic experience. Very briefly it is intended here to discuss the common points on which the medical clinic and its social service department meet, and the principles which underlie their harmonious coöperation.

It is doubtless true that the physician is the strategic center and most essential unit of the great majority of charitable and benevolent enterprises. To recognize the degree to which he is vital to these, it is only necessary to abstract the entire medical element from any such enterprise and see how much of a practical or coherent organization is left. It is also doubtless true that too often the medical relief program of various social agencies is presented ready-made to the physician by laymen, and the physician is neither consulted nor seriously considered in its arrangement. To whatever extent this situation exists, it is in no sense a reflection on the social agency. It may even be a credit to the lay public. *It does reflect on the physician.*

If the physician does not assume and exercise that leadership in social medicine which is his by right of professional heredity and training, then he must expect to see this leadership go to others. These may be less expertly trained, and may lack any lineage of professional ideals and traditions, yet nonetheless to them will go the leadership. And further, if the physician contents himself with refusing to accept the ready-made program submitted, he can expect to see cults, quacks and isms step gladly in to assume his rôle of teacher, healer and minister. Assuredly the physician must live up to the obligations of his professional heredity and his training, he must take a guiding and influential lead in the organization and administration of social agencies, if he would preserve a noble reputation from decay, and if he would not be the cat's paw of more benevolent but less skilled laymen.

In no field of social work can the physician better exemplify these doctrines than in the social service department of the clinic. Here he can learn the social point of view, the problems of after care and the practical difficulties of following medical advice, and, in turn, he can instruct the social worker in medical goals and methods, and in the nature of the medical problems appearing. Here the physician and the social worker can each at once be teacher and student, to their inestimable mutual advantage.

CRITICISM OF THE CLINIC.

Criticism of the public free clinic in general can be referred to one of three heads.

1. Abuse of the clinic by patients able to pay. This criticism is heard chiefly from physicians, both within and without the clinic staff, who feel that to a certain extent, the clinic is in competition with private practice. To whatever degree this is true, the criticism is justified. As a matter of fact, however, experience in the Stanford clinics confirms experience in the larger eastern clinics to the effect that probably not over two per cent., at a maximum, of clinic patients are really able to pay private fees. Included in this number of course are those who consciously seek free medical service when abundantly able to pay for it, and therefore when not entitled to it. The bulk of this possible two per cent. are, however, those "borderline" cases, where it is difficult to decide whether free treatment is proper or not.

These borderline cases require careful judgment and social study, which, in turn, demand time. It is safe to say that as a general rule judgment must rather incline here toward leniency, as it is better to treat several undeserving patients free than to turn away one patient who deserves clinic service. No fixed standard can be applied. Each case must be considered on its individual merits. Judgment of these merits requires tact, social skill, experience and time. What physician possesses all of these necessary attributes, or possessing them, will use them all? Here is the need for the social service department illustrated.

In short, prevention of abuse of the clinic by patients able to pay, rests with the social service department. In an attempt to meet the problem of the borderline patient, the patient who is not quite able to meet private fees, but is not entitled to free treatment, there has been developed at Stanford a pay diagnostic group, where for a fixed and moderate fee, a patient can spend three days in the hospital and receive the benefit of group diagnosis and complete laboratory examinations. This group comprises men from the various out-patient clinic staffs. Another plan in operation in some places, is to make a small fixed charge for each visit to the clinic and allow the social service department to excuse needy patients from paying this fee.

2. Clinics are subjected to a limited amount of criticism on the score that they act as feeders for the private practice of the attending medical staff. Insofar as patients are found by the social service department to be ineligible for free clinic service, it is right and proper that they should be sent to reputable and well-trained physicians. It is entirely fitting that these physicians should be the attending physicians of the clinic. Reference of such patients should be in rotation to members of the clinic staff, on the basis of private patients quite apart from the clinic.

3. The most valid criticism of the clinic is that of poor service to the patient, wholesale medical practice, aiming at number and quan-

tity rather than at careful efficient scientific work. As with the first two objections, so here, the social service department offers a solution of the difficulty. By saving the doctor's entire time for strictly professional work, the social service department makes it possible for him to do better work for each patient. Full and careful clinical records, preserved in a permanent file, will go far toward improving the character of clinic service. Not a large clinic, but a clinic characterized by careful and accurate diagnosis and treatment, should be the objective. It would be just and well if every city doctor spent regular hours in clinic service. It would improve the service and the doctor, as well as enabling the doctor to render systematically that modicum of charitable service which is rightly expected of him.

FUNCTION OF THE CLINIC

1. The first and paramount function of the clinic and the one primary reason for its existence is service to the patient. This absolutely must take precedence over every other consideration. Service to the patient comprehends diagnosis, immediate symptomatic relief, medical and surgical aftercare, social relief, contact and family investigation and relief. It is unnecessary to elaborate on the important ways in which the social service department coöperates with the medical staff in attaining each of the desirable ends.

2. Service to the doctor. The clinic subserves the valid purpose of improving the doctor in theory and practice. It is in no sense a free experimental field for exploitation of the patient. Nevertheless scientific improvement of the doctor should be a conscious part of the program and ideal of the clinic.

3. Service to the student. The teaching clinic can offer the highest type of service to the patient. It can in turn give the student invaluable instruction in ambulant medicine, instruction which can be obtained nowhere else.

4. Service to the community. Like the hospital, and to an even greater degree, the clinic should be a community center, the point from which radiate all public health activities and propaganda for the territory tributary to it. It is not necessary to expatiate on the development of this idea. It represents the stronghold of the medical profession, and the unit through which it is to maintain itself in the stress of present social conditions.

Among the important relations of the clinic from the standpoint of community service may be mentioned the after-care and follow-up of patients: the instruction of practical nurses from among the girls and women of the community: classes of instruction in various phases of infant and child nurture, domestic arts, sanitation, personal hygiene, preventive medicine, first aid, mental hygiene, etc.; care of disease in the home; education of the community in the broader phases of better housing, industrial physiology, and the program of modern scientific medicine. Through the social service department the community should be educated in the value of periodic physical examinations, and examinations in health for incipient disease. This could well be made a separate department of the clinic.

The clinic should be a community institution and a community center for public health propaganda and activity. The tributary community should feel a proprietary relationship to the clinic. Here, even more than in the other functions enumerated, the social service department reaches the acme of its possibilities and opportunities.

FUNCTIONS OF THE SOCIAL SERVICE DEPARTMENT.

In a sense the functions of the social service department have already been indicated. They may, however, be summarized briefly as follows.

1. Follow-up for (a) social relief of patients, (b) continued treatment, (c) protection and care of contacts and families.

2. Investigation of patients applying for admission to clinic. It is short-sighted and illogical to belittle the actual importance of investigation of patients applying for relief in the clinic. Not all patients require such investigation. But a varying percentage do require it, and require it for the legitimate protection of the medical profession, of the supporting charitable agencies, and of deserving free patients. To call such investigation "detective work" may describe it but does not decrease its necessity. All constructive social relief is founded on "detective work." Instances multiply in the mind of the miscarriage of social relief where it is not based on the proper sort of "detective work" or social diagnosis.

Investigation of persons applying for clinic relief is absolutely necessary but it is not the doctor's job, and if he undertakes it, he merely takes time better spent in professional activity, and exposes himself to wholly unnecessary criticism, and the suspicion of using the clinic as a feeder of private practice.

3. Training of nurses and social workers. It is of the utmost importance that social workers as a class should have an accurate first hand knowledge of the aims and methods of medical practice, of the ideals and difficulties of scientific medicine. Acquaintance with social problems from the medical point of view will wonderfully enrich and broaden the social point of view. Nowhere, not even in the hospital, can this instruction be afforded more favorably than in the clinic social service department. Nurses' training schools should afford at least to those nurses who elect it, and to those looking toward public health nursing, the advantage of service under a trained social worker, in the social service department of a clinic.

CONCLUSION.

The relation of the social service department to the clinic has not yet reached its full and proper development. This development requires coöperation and greatly increased mutual knowledge on the part of the social workers and the medical staff of the clinic. The work of the clinic, comprising all that is included by social and scientific medicine, can best be translated to the community through the agency of the social service department.

THE TECHNIQUE OF LUMBAR PUNCTURE.

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This slight operation which, with proper technique, is almost painless, may become the source of considerable torture to the patient if not properly carried out. The technique is, however, simple, yet in the hands of many seems extremely complex. The main points are coolness, exact anatomical knowledge, careful direction and the coöperation of the patient. Good coöperation is often difficult to secure, largely because of the fear of the patient or, in psychotic people, because of the psychosis.

Certain points in the technique have struck me with particular force and I wish to emphasize these in connection with a brief description of lumbar puncture.

Position: Puncture may be done in either the upright or lateral decubitus positions. Having used both, I much prefer the lateral position. The patient lies on the right side with knees and chin as nearly as possible in opposition with the chest. This makes a nicely rounded back in which the anatomical land marks may most easily be recognized. Patients are told in simple language that if they hold the position the pain will be like that of a pin prick; that they are going to be pricked; that the anticipation is worse than the realization. In other words the operation is explained and the patient reassured. An attendant holds the patient in the position, exerting as little actual force as may be necessary.

Asepsis: It is unnecessary to emphasize the importance of absolute asepsis on the part of the operator. He should prepare himself with the same care that he would for any other operation. The needles should be thoroughly sterilized by boiling, and the tubes into which the spinal fluid is drawn should be sterile (in order that the tests shall not be interfered with by bacterial contamination).

We have found a very simple preparation of the patient to be entirely satisfactory. The selected portion of the back is painted with tincture of iodine and no more elaborate asepsis is apparently necessary. Many thousands of punctures have been done here without ever recording any instance of infection as result.

Needles: We find that the most satisfactory type of needle is one devised by Leshinsky of New York. This is made of a nickel alloy. It is flexible and will bend to almost any angle without breaking. It is made in much the style of the original Quincke needle, with a stilet that is always ground in position when the needle is sharpened. The ordinary Luer syringes can be fitted to the needle for medication or when aspiration may be necessary.

One of the important points in satisfactory technique is that the needle shall be sharp. With a good sharp needle there is much less probability of excessive pain to the patient.

Land Marks: The *site* of election for lumbar puncture is between the third and fourth lumbar vertebrae. This space is usually the widest. With the back in the right position, however, lumbar puncture may, with entire safety, be performed in the second and fourth spaces and rarely in the first space. In children, one needs to remember that the spinal cord extends to a lower point in the vertebral canal than it does in the adult. In the adult the lower end of the cord is usually about at the first lumbar intervertebral disc. Accordingly, punctures below this point may be done without danger of injuring the cord. The third lumbar space is, as a rule, about on the level with the crest of the ilium. This constitutes a useful guide in fat people, when palpation of the spinous processes may be uncertain.

One must be careful to find the middle line and one must be careful to allow for spinal curvature, if such exists. The *point* of election for puncture varies. I prefer to go in the middle line, going through the thinnest portion of the supraspinous ligaments, and so straight in, whereas others prefer to take a point about five millimeters to the right of the middle line, thereby avoiding the supraspinous ligaments altogether. However, I find that I am able to direct the needle more accurately if I take the middle line than if I go to one side. At times, however, as where there are many exostoses of the spinous processes, it may be necessary to go to one side in order to avoid the bone.

Direction: With the index and middle fingers of the left hand, the operator locates the point at which he wishes to do puncture. With the elbow raised these two fingers are applied to the middle line from the left side of the patient. Having found with the middle finger the spinous process below which we wish to insert the needle, and having ascertained the general characteristics of the space with the index finger, the index finger is then pulled downward on to the spinous process of the next vertebra, thus rendering the skin tight and leaving a space between the two fingers, corresponding to the intervertebral space into which the needle is thrust.

Most of the difficulties in puncture, which are not to be explained by lack of coöperation, are due to the failure of the operator properly to direct his puncture. Having located the space with the thumb, he takes the thumb away and jabs at the space with the needle, or perhaps he marks it in some way and then jabs. The difficulty here is that the relations are not precisely kept in mind at all times, as they may very easily be if the fingers are kept in position in the manner described above.

In quiet, coöperative patients, in whom the land marks are at all palpable, the above method will obviate the necessity for punching and poking around and causing the patient great pain by bringing the needle in contact with the periosteum. If one is careful to keep the mid line, to direct the needle at right angles to the longitudinal axis of the column, to select carefully his space and then go through it with equal care, results are very good indeed. Rarely, however, bone will be encountered in an unexpected place. In such cases, by withdrawing the needle slightly and altering its direction, always in the axis of the column, we are usually able to get into the canal without further difficulty.

Having found the proper place, the needle should be quickly passed through the skin and then further progress may be more slowly made. If the needle is slowly pushed through the skin, the pain is considerably increased and the tendency to arch the back forward is also increased. This is one great advantage of a sharp needle.

The pain of lumbar puncture comes: (1) when the skin is pierced; (2) if the periosteum is touched; (3) referred pains occur when bundles of nerve are struck. In the normal case no referred pains will be complained of, since the nerves being movable slide out of the way of the needle. But in cases with meningitis, when the nerves are matted together and so do not evade the needle, pains may be referred to the leg; and rarely we may get involuntary kicking, due to irritation of motor roots.

One can usually tell when the needle is entering the spinal canal. There is a slight increase in resistance to the passage of the needle, when the dura is reached, and this suddenly gives way to non-resistance, often with a slight sound which is perceptible. This very characteristic feeling of loss of resistance indicates the proper time to stop inserting the needle.

Care must be taken that the needle goes in straight and not to one side. Occasionally this occurs and the point of the needle is inserted into the dural space at its lateral margin. In such cases very little fluid will be obtained. By partially withdrawing the needle and redirecting it straight, fluid may be gotten.

Care must be taken not to over-run and go into the bone or intervertebral disc at the front of the canal. This is painful and often gives slight hemorrhage into the fluid.

In many cases the fluid does not run very rapidly and we have found that by twisting the needle, without varying its depth of introduction, the fluid will nearly always run out at a sufficiently rapid rate. Just why this should be so is not entirely clear.

One should not withdraw more than 10 c.c. of fluid, except in cases which are to be treated. It is safer to withdraw smaller than larger amounts, because of possible after effects. When a sufficient quantity of fluid is obtained the needle should be quickly withdrawn.

The iodine is then washed off the back with alcohol, flexible collodium applied to the point or points of puncture and the patient is put to bed for 24 hours. During this time he should lie flat on his back, without a pillow, and it is somewhat advantageous if the foot of the bed be raised. He should have only a liquid diet during this time.

After-symptoms of puncture do not, as a rule, occur in those with a meningitis. It is very rare indeed for a paretic or other case of neurosyphilis to suffer any discomfort after lumbar puncture. Cases with normal meninges, however, often have headache and sometimes nausea and vomiting, particularly if they have not kept quietly in bed or if an excessive amount of fluid has been withdrawn. In case headache and nausea are complained of, we find that potassium bromide, in 20 grain doses, given once, or twice if necessary, will often suffice to correct the headache and nausea. At times a mild grade of headache may persist for several days. Very rarely the discomfort is so acute that it is necessary to give a hypodermic.

SUMMARY

With some coöperation on the part of the patient and a good technique, lumbar puncture is a simple and practically painless operation. With good technique it may be successful even in the absence of coöperation. The major points in technique are: Accuracy of position, accuracy of direction, quickness, knowledge of where to go and when to stop. The after care of patients is simple, but they may require sedative medication, if any unpleasant results, chiefly headache and nausea, occur.

A MILK-BORNE EPIDEMIC OF TYPHOID FEVER AND THE DEMONSTRATED VALUE OF THE WIDAL REACTION IN DETECTING A TYPHOID CARRIER.

By Edward B. Bigelow, M.D., Worcester, Mass.,
and
Gustaf L. Berg, Worcester, Mass.,
Inspector of Milk, Worcester Board of Health.

In the first nine months of the year 1919, Worcester, Massachusetts, a city of 190,000 inhabitants, had twenty-one cases of typhoid fever with one death therefrom. In the last third of October and the first few days of November an epidemic of twenty-five cases occurred, with three deaths. Two of these three deaths took place outside of Worcester. On October 21, the first six of these cases were reported to the local Board of Health either as typhoid fever or specimens of blood were sent in for Widal reactions. An immediate investigation was instituted. All six cases were found to be upon the route of one distributor, whose plant was in a neighboring town. His milk passed through a mixer. His delivery daily was 1600 quarts. In this city the average consumption of milk each day is .4 of a quart per capita. There is a possibility, therefore, that the milk was distributed among some four thousand people.

This distributor, his family and employees, numbering eleven, were not sick, gave no history of recent illness or past typhoid. Their Widal reactions were all negative. He secured his milk from thirty-nine dairies, none in the city limits, but all within a radius of fifteen miles. On these dairy farms two hundred and five persons were found to live. Four of them were sick. Eight gave a history of previous typhoid. One of the sick, a child, was definitely diagnosed as a case of typhoid fever. This child from the onset of symptoms had clinically been sick the same length of time as the cases reported in Worcester. Therefore this case of typhoid was not the source of the epidemic. The other three cases of sickness did not prove clinically to be cases of typhoid and their Widal reactions were negative. Specimens of blood from the eight persons with a typhoid history, with the exception of that of one man, gave negative agglutination reactions with typhoid bacilli. The man, whose blood gave the positive Widal reaction in a dilution of one to fifty, was the father of the child with typhoid fever. At once urine and feces in sterile containers were obtained from him. Upon examination of these specimens in the laboratory of the Worcester City Hospital, typhoid organisms were recovered from the feces. The urine was negative.

After obtaining the positive Widal it was learned on further questioning that this man had typhoid fever in 1906. Since then he had been carrying on his own farm and selling from twenty to one hundred quarts of milk daily. He also gave a history of typhoid fever among the customers upon his milk route in previous years. So a request was then made of the State Board of Health for a report of any investigation that might have been made previously. These interesting facts were brought out from their report. In 1907, the year after this man had typhoid fever, his wife and daughter had it. In that same year, among customers of his milk in the near vicinity of his farm, there were two additional typhoid fever cases; in 1908, two; in 1911, two; in 1912, two, and early in 1913, six cases. In 1909 there were two cases and in 1910 another one in the neighborhood, which may have had some connection with his farm. At the same time as the six local cases early in 1913 there were twenty-eight more in a distant community, which received milk from his farm through an intermediate distributor. None of these cases came under the jurisdiction of the Worcester Board of Health.

The interesting circumstances in this epidemic, as in several other epidemics that we have investigated, are: (1) The small number of persons actually developing typhoid fever among those who may have ingested the organisms. (2) That dairymen, who are carriers, though excreting typhoid organisms continuously for weeks and months at a time, with occasional intermittances, rarely contaminate the milk. In this case, probably, the milk was dangerous only on one day, as the cases were clinically all of the same age. (3) The value of a positive Widal reaction as an aid in the detection of carriers has been previously advocated and proved.[1, 2] Usually a short time after defervescence the blood of typhoid patients, except in strong dilutions, loses its agglutinating properties. Therefore, if necessary in the search for the source of an epidemic on a milk route, specimens of blood may be obtained from all persons residing on the dairy farms. Those persons, specimens of whose blood give positive agglutination reactions, are much the more likely to be old harborers of the organism. The more laborious task of examining urine, feces, and even the discharges[2] from chronic post-typhoidal sinuses can at first be limited to such persons with the expectation that the carrier will be earlier and more easily located.

REFERENCES.

[1] Bigelow, E. B.: Jour. A. M. A., Oct. 28, 1911, Vol. lvii, p. 1418.
[2] Bigelow, E. B.: Jour. A. M. A., May 4, 1912, Vol. lviii, p. 1339.

THE USE OF BLOOD AND BLOOD SERUM IN THE TREATMENT OF DISEASE.*

By C. K. Johnson, M.D., Burlington, Vt.,
Professor of Pediatrics, University of Vermont.

There has been considerable advance recently in our knowledge of using blood in the treatment of disease both as to methods of use and a broadening of its field of usefulness. Several methods have been brought forward from time to time as the Carrel end to end anastomosis. The syringe method of Lindeman. The use of whole blood, blood serum or horse serum.

The methods of Carrel and Lindeman have given excellent results in the hands of those well trained in the necessary technique.

The use of blood injections has been a life saving measure in many cases of hemorrhage. In the hemorrhages of the new born its use has greatly reduced the mortality rate.

In the world war blood injections have undoubtedly saved many lives. The citrated method was the most in favor. Zingher has done extensive work with transfusion by different methods and speaks of it in the highest terms, calling attention to the great empiric value of fresh blood, of its great nutritive value, its marked stimulating properties, and its well known antibody content.

He used 4 ounces up to four years of age and 6 to 8 ounces in older children and adults, favoring the intramuscular injections on account of its more rapid absorption, using an ounce Record or Luer syringe with a needle of 17 or 18 gauge, adding one ounce of blood to one cubic centimeter 10 per cent. sodium citrate solution.

Zingher also says that when treating septic cases with a doubtful prognosis we should include the administration of this harmless yet often efficient remedy.

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* Read before the Burlington Clinical Society, December, 1919.

Brenizer has recently described a simple method of transfusion in which the operation needs but little assistance. There are apparently cases of hemorrhagic disease of the new born, in which the injection of blood fails to check the hemorrhage, but its use is so generally successful that it should be used in all cases. In my own experience I have seen two of these cases where the transfusion seemed to be of but little value, while in others good results have been almost immediate.

Dunn remarks that it should be remembered that cases due to bacterial infection, syphilis, ulcer of the stomach or intestine are not favorable for this method of treatment. If this statement is correct this may account for the occasional failure from the transfusion method.

As already stated, it seems that absorption takes place more readily if the injections are made intramuscularly and this method should be more generally used when injecting diphtheria antitoxin.

Convalescent serum has been gradually extended in its field of usefulness as a therapeutic measure. Some years ago the use of convalescent serum in severe cases of scarlet fever was shown to be of value; more recently it has been used in infantile paralysis, and in the recent epidemic of influenza very encouraging results are reported in the cases complicated with pneumonia. Some months ago I reported a case of influenzal meningitis apparently cured by the use of convalescent serum used intraspinally and intramuscularly. This I believe is the first case of this condition in which convalescent serum has been used. This boy now seems perfectly well one year later.

Richardson and Connor report that blood serum from patients convalescent from measles conveyed considerable immunity. As to methods of transfusion, one deserves special consideration: this is the use of the longitudinal sinus.

Fisher has said that this sinus was left accessible for emergency. Marfan was the first to use for emergency. Marfan was the first to use this solution. At this time Tobler described the anatomy of this region and the necessary technique. Helmholz followed by describing a special apparatus for injecting blood by this route.

To enter the sinus the needle penetrates the skin and fibrous tissue a depth of about ¼ inch. The widest part of the sinus is at the beginning of the suture just posterior to the fontanelle, at this point measuring from 5/32 to 6/32 of an inch. A needle about 1¼ inches long of 18 to 20 gauge is advisable. Some operators prefer a needle with a short bevel others one with a long bevel: but in either event it is advisable to introduce the needle with the bevel parallel to the skin. There is very little pain produced by the procedure, cases having been reported where blood has been withdrawn without awakening a sleeping infant. This sinus is now frequently used for the introduction of arsphenamine, diphtheria antitoxin, saline solution, dextrose solution, whole blood, blood serum and sodium bicarbonate solution, also for securing blood for culture or for the Wassermann test.

It has frequently been impossible or at least very difficult to secure access to a vein in infants and I am sure that the use of the longitudinal sinus will be more general as we become familiar with this avenue of approaching the blood stream.

Lindeman has recently reported good results from transfusion in cases of tropical sprue, pernicious anemia, gas poisoning, nephritis, leprosy, and in patients with severe hemorrhage. He says that there is no condition so grave, from hemorrhage, alone, that a patient cannot be revived by blood transfusion.

Infants with jaundice, delayed clotting time, and a tendency to hemorrhage may be greatly benefited by the injection of blood. It may also be useful in the treatment of purpura. It is unnecessary to say that hemolytic tests should be made in these transfusion cases unless the emergency is great.

I wish especially to draw your attention to the use of blood in infants with anemia and malnutrition, thinking that in some cases it is a valuable adjunct to other methods of treatment.

Good reports from the use of blood in these cases come from Kerley, Koplik, Freeman and others. Freeman also reports good results in these cases with the use of horse serum, but states that there was a lessening of the improvement when the injections were stopped; and when the injections were resumed the infants again began to gain. He believes it is useless to inject less than 20 cubic centimeters of serum. In these cases with repeated injections as with the use of diphtheria antitoxin the skin test should be used.

Langly Porter has recently used horse serum intraspinally in the treatment of chorea, after the method of Goodman, and reports favorable results.

Much has been written regarding the advantages and disadvantages of the so-called citrated method and whole blood injections and the production of reactions. Both methods have their adherents. Brithlingham states that no method is reaction free while others seem to look on a moderate reaction as of favorable omen. In my cases I have used blood from the parents, more often from the mother, except in a few cases where horse serum was used, and have had no unfavorable results.

Case 1. Male, 4 months of age. Instrumental delivery, birth weight, 7¾ pounds. A large cephalhematoma developed after delivery and persisted for some time. Breast fed one week then given a high fat mixture, considerable disturbance resulting, so when first seen by me at 4½ months of age the weight was 7 pounds, ten ounces There was marked malnutrition, pallor, edema of ankles and hands. By changing to a low fat in the food the digestion was somewhat improved but there was very little general improvement. A blood examination showed the following: Hemoglobin, 20% ; red cells, 2,120,000. whites, 8,100; polynuclears, 36: lymphocytes, small, 48; large, 12; eosinophiles, 4: some poikilocytosis; cells staining poorly. At this time two ounces of the father's blood was injected subcutaneously by the citrate method. No change of account was made in the food for some time but there was considerable general improvement. After four weeks two ounces more blood was injected. From this time on there was a gradual change for the better so that at the end of four months the blood count was as follows: Hemoglobin, 65% ; red cells, 3, 900,000; whites, 8,500; polynuclears, 36: lymphocytes, 61 ; eosinophiles, 3.

Case 2. Female, 5 months of age, birth weight 4½ pounds, a twin, breast fed, present weight 12 pounds, which has been stationary for some time. This infant was very white, ears transparent, and mucous membranes pale. She did not act sick but was less active and playful than her sister. Blood examination May 20th 1919· Hemoglobin, 30; whites, 5,400; red cells, 3, 150,000; lymphocytes, 68; basophile, 1; nucleated red, 1; polynuclears, 30.

At this time one ounce of mother's blood was injected intramuscularly. June 24th two ounces more of blood was injected. Aug. 24th, 1919, blood examination: Hemoglobin, 65: red cells, 400,000: whites 9,500; lymphocytes, 63; polynuclears, 26; eosinophiles, 2. Few nucleated red cells. The infant looked better and was gaining in weight. Last report was September 12, 1919, and this time the infant weighed 15 pounds and was doing well.

Case 3. Female. Born May 8, 1916, birth weight, 7¾ pounds. Seemed normal in every respect, cried well at birth, on the 9th, 7.30 a.m. passed a large bloody stool. Temperature normal, took breast well, 10 p.m., another bloody stool. On the 10th, 2 and 4 a.m., bloody stools. Ergot was given at this time. Seen in consultation at 9.30 a.m. Temperature normal, pulse, 170; infant refused to nurse; physical otherwise negative: 30 c.c. of the mother's blood was injected subcutaneously and more blood obtained to prepare serum for later use if needed. At 11.30 bloody stool, 1.30 p.m. nursed well, 2 p.m. a slight blood stained diaper, 9.30 p.m. 15 c.c. serum injected, no stool; 8 a.m., temperature, 103 3/5° F. On the 12th, 5.30 a.m., small dark stool; temperature, 102° F. On the 13th no blood, nursed well and has been normal since.

More cases should be cited but these are illustrative of the conditions previously mentioned.

Book Review.

Venereal Diseases. By C. H. Browning, M.D., D.P.H., and David Watson, M.B., C.M., with an Introduction by Sir John Bland-Sutton, F.R.C.S. London: Henry Frowde and Hodder and Stoughton. 1919

This book of 321 pages gives in an exceedingly concise and thorough fashion the diagnosis and treatment of syphilis and gonorrhea. The reader is impressed by the feeling that he is getting first-hand information,—not ideas which are threadbare from having been handed down from one author to another.

No essential facts are missed: the balance of the book is good. This is especially noteworthy in the section on gonorrhea, the treatment of which is exceedingly difficult to describe because of its complexities. The writers have handled this very well, keeping all the while a good perspective. They are not unduly enthusiastic over any one line of treatment but state fairly the value of each.

In some minor points, such as their estimate of the worth of epididymotomy in acute epididymitis, they do not agree with many genitourinary surgeons. As a whole, their book represents the best in present-day management of syphilis and gonorrhea. The appendix contains many technical details in laboratory procedure in a convenient form for quick reference.

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MEDICAL PUBLIC SPIRIT OF PHYSICIANS.

The books and financial conduct of the Journal have been open to the Fellows of The Massachusetts Medical Society ever since it became the official organ of the Society. There have been, however, so many evidences of misunderstanding among the Fellows, which have come to the attention of the editors, that a brief statement concerning the past and present finances of the Journal seems desirable.

When the question of making the Journal the official organ of The Massachusetts Medical Society was under consideration in 1914, the then owners, Dr. William L. Richardson, Dr. Frederick C. Shattuck, and Dr. John C. Warren, felt they should not be asked to assume any new responsibilities that such an affiliation might imply.

Although it had been commonly believed that these gentlemen had derived income from the Journal, the facts of the case were that they had more than once put their hands in their pockets in order that the Journal might continue, and at no time, we believe, had they received any financial return. It was a fine example of medical public spirit silent in the face of misinformed criticism.

The Committee of The Massachusetts Medical Society, who were considering the proposed affiliation, very properly desired to know who would be responsible for the finances of the Journal, before recommending or advising against any affiliation. At this juncture, other younger public spirited physicians agreed to accept this responsibility. These men were Dr. Hugh Williams, Dr. Edward C. Streeter, and Dr. Joel E. Goldthwait. The old owners, believing that the Journal was free from all debts, sold their rights to the new owners for one dollar. When it was determined, after careful investigation, to incorporate the Journal as a charitable institution under the laws of Massachusetts, and to secure the services of a different publisher, it was discovered that the Journal had debts, chiefly to the old publisher, amounting to over five thousand dollars. The old owners, as surprised as the new owners, refused to allow the latter to bear this burden alone, although legally the old owners were not responsible, and these six men assumed and paid the debts out of their own private purses.

The incorporation as a charitable institution was undertaken in order that at no time in the future could any financial profit accrue to the owners. In spite of this published fact, criticisms of the Journal as a money-making scheme continue to be heard. The facts of the matter are as follows:

Neither the old nor the new owners have been paid back the money they advanced, and all have in legal form released the corporation from these debts. The Journal has been run since the affiliation of the Society without loss or further funds from the owners; has paid the Massachusetts Medical Society from its profits five hundred dollars, and has accumulated a small working capital of approximately one thousand dollars. Recently, Dr. Hugh Williams and Dr. Joel E. Goldthwait have resigned as owners of the Journal, and with Mr. Ernest Gregory, the manager, have also resigned from the corporation. It is perhaps needless but none the less fitting to express to the original and to these later owners, the gratitude of the JOURNAL for their unselfish service and important financial assistance. Dr. Robert M. Green and Dr. George G. Smith have become, with Dr. Edward C. Streeter, the present owners, and with Dr. F. B. Lund have been made members of the corporation.

With this reorganization following the war, the JOURNAL begins the last decade of its first century of continuous existence, the oldest medical weekly in America, independently owned and published by physicians. In the future, as in the past, it will continue to maintain an ethical advertising standard and an independent editorial policy. It relies on the friendly, helpful criticism and cordial support of its contributors, of the Fellows of The Massachusetts Medical Society, and of other members of the profession among its readers, whose interests it will always endeavor to serve with its best ability.

DISTINGUISHED AMERICAN PHYSICIANS.

IT may interest members of the medical profession of today to learn something of a number of American physicians who achieved positions of distinction in this country in days gone by. We are indebted for this information to Dr. Beverley Robinson, who has depicted for us in an article in the *Medical Record* the professional ability and personal characteristics and eccentricities of earlier physicians. We should have been glad to have known the men whom he describes with much charm—the Meigs, father and son, the elder Pepper, Gross, Da Costa, Alonzo Clark, William Parker, and others equally interesting; Loomis, the elder Janeway, the elder and younger Flint; Markoe, Sands, Peters, and their successors, Bull and McBurney.

Dr. Robinson was an assistant to Dr. Alfred L. Loomis, whose clear forceful manner of speaking and whose fund of information expressed with such spirit and enthusiasm was an incentive and inspiration to all his pupils. Loomis believed in teaching positively, stating the facts boldly and refraining as far as possible from speaking of exceptions. In contrast to him was the elder Flint, who preferred to mention exceptions rather than leave it to the students to discover them later on. Dr. Flint had no great faith in drugs, but of two remedies he was especially fond, potassium iodide when a modifying agent was required, and Huxham's tincture of bark.

Dr. Austin Flint is mentioned by Dr. Robinson particularly for his remarkable qualities as a consultant. To young inexperienced physicians, who were struggling to do their best, he listened with interest, examining the patient and suggesting methods of treatment, yet seldom committing himself in matters of diagnosis. Never was his manner more courteous and his personal charm more apparent than when waving aside a patient's questioning relatives and referring them to the family physician.

The attitude of Dr. Charles Meigs reveals one interesting aspect of professional etiquette in former days. Dr. Meigs never sent a bill to his patients; to do so would have lowered in his estimation the high ideals and nobility of his profession. An "honorarium" he would accept gladly if it were sent to him. Physicians in those days lived even more laboriously than do the doctors of today, with few or no amusements, not even a theatre party or a game of cards or billiards. Many of them, fortunately, were men of considerable social position, who had inherited money from their parents.

Of the surgeons, William T. Bull and Charles McBurney, of Francis Delafield, a noted pathologist, there are interesting reminiscences. We are told of Dr. Edward J. Janeway's skill as a diagnostician, of his love and devotion to medicine, and of his accuracy. Dr. Janeway had little faith in drugs, except those of the simplest nature; he would measure a small dose and say, "I would take that myself; I don't believe it will hurt you." Although consulted far and wide, he never took advantage of his professional standing to charge anything but moderate fees.

Then there was T. Gaillard Thomas, and Emmet and Sims, the leading gynecologists; Fordyce Barker and A. A. Smith, obstetricians; Lewis A. Sayre, one of the first orthopedic surgeons; William T. Lusk, an obstetric clinician, and James McLane, through whose efforts was founded the Sloane Maternity Hospital; and Dr. George F. Shrady, editor for many years of the *Medical Record,* and physician to General Grant in his last illness. In answering a question as to how he amused himself, the words of William L. Polk expressed the general attitude of the profession in his day toward recreation: "I do not. I have never found time and I do not know how. I fought on the southern side in the war of the States, as a private soldier at one time, and I tell you the life of a conscientious successful general practitioner of medicine is more trying and arduous."

THE LEAGUE FOR PREVENTIVE WORK.

Five years ago, in March, 1915, there was organized in Boston a League for Preventive Work, for the purpose of making possible closer coöperation between twenty-two social service agencies in the prevention of some of the causes of misery found among the families in this city. The value of such an association of agencies as a medium both for the exchange of experience and ideas among the members and for the solution of problems arising in connection with individuals and groups outside its own membership has been established. It is hoped that the success of this federation may lead to the organization of a greater undertaking in preventive work—the creation of a Council of Social Agencies in Boston.

The annual report for the year 1918-1919 describes the work which has been undertaken by the League of Preventive Work during the past year. One of its chief fields of activity has been its work with the feeble-minded. There are now 3,238 persons registered by the League and diagnosed as feeble-minded, who have needed help from the social agencies in the State. Through the effort of these agencies, 1,025 of these people are receiving State institutional care; the other 2,213 are in the community without authorized supervision or care. The League has made a study of three hundred families in which there is feeble-mindedness. Massachusetts leads all other states in her care for the mental defective, but to make our present laws function as fully as possible we must have a larger number of trained psychiatrists and special class teachers.

At the suggestion of the Associated Charities, the League has begun a study of the effect of national prohibition upon families socially handicapped by the use of alcohol. The study is divided into two parts: In the first, a careful record is made of the status of these families before July 1, 1919, when the saloons were generally closed; the second part will require a visit to these same families after January 15, 1921, one year after national prohibition. The League has begun to see already some reduction in human misery and crime through prohibition.

The Dietetic Bureau conducted in connection with the League for Prevention Work, has proved itself during the past year to be a vital constructive agency. A study of two hundred families of limited means, in 1917, revealed the fact that while the majority of families were spending enough money for food to feed the family adequately, about one-third were not spending it in a way most likely to develop healthy boys and girls. To meet the various functions of the Bureau, the work has been developed along five distinct lines: (1) Direct work with individual families through nutrition workers who go into homes where there are either malnourished or convalescent children, or adults who are not recovering strength because of insufficient or improper food; (2) nutrition classes for malnourished children in connection with some medical agency where these children are taught how to gain in weight or resistance and inspired through competition to follow out the health rules given them: (3) group and individual conferences and correspondence with social workers, nurses, and others interested in food problems; (4) selecting and arranging such recent scientific data as may be of use in the work; (5) the training of students to enter the field of dietetics in social work. Various examinations of the physical condition of children show a large number who are malnourished because of improper food, while experience has shown that many of these same children improve with a change in dietary habits, frequently without an increase in the amount of money spent for food. A survey of the work accomplished by the Dietetic Bureau during eighteen months shows gratifying results. The growing number of requests for assistance indicates a keener appreciation of what proper food means for the children and the possibility of making conditions more favorable for them in future.

The value of the League for Preventive Work in dealing with emergencies was illustrated by the promptness with which measures were taken to protect the children at the time when a recurrence of the influenza epidemic was impending. A committee formed of members representing children's agencies arranged for exposed children temporary shelter which could be opened at a day's notice. Fortunately this was not needed, but the action of the League showed the possibilities of mobilized concerted action. The League is looking forward to the formation during the coming year of a Council of Social Agencies in which the constituent agencies of the League may take part in solving through joint action the many difficult problems which confront the social workers of Boston.

MEDICAL NOTES.

CORNELL MEDICAL COLLEGE LECTURES.—During the month of April a course in fractures was given at the Cornell Medical College by Dr. Joseph A. Blake, Dr. George W. Hawley, and Dr. James N. Hitzrot Five. One lecture was delivered by Dr. Alexis Carrel and other exercises were given by Dr. H. H. M. Lyle, Dr. Burton J. Lee, and Dr. John C. A. Gerster.

GIFT OF PORTRAITS TO JOHNS HOPKINS UNIVERSITY.—At the commemoration Day exercises held recently at the Johns Hopkins University, Prof. William H. Welch presented to the University a portrait of Dr. J. Whitridge Williams, dean of the medical school, and a portrait of Dr. Florence R. Sabin, Professor of Histology, was presented by Prof. William H. Howell.

MEETING OF THE AMERICAN MEDICAL ASSOCIATION.—The American Medical Association opened its seventy-first annual session in New Orleans on April 26, 1920. This is the fourth time that the Association has convened in New Orleans. In 1869, after the Civil War, the twentieth annual session under the presidency of Dr. William Owen Baldwin aided in bringing into cordial relationship with the national association members of the medical profession in the South. The thirty-sixth annual session was held in New Orleans in 1885, under the presidency of Dr. Henry F. Campbell. Again in 1903, the Association met for its fifty-fourth session in that city, with Dr. Frank Billings as president. Dr. Alexander Lambert of New York, president of the Association, presided over the annual meeting this year. Dr. William C. Braisted, surgeon-general of the United States Navy, was inducted into the office of president for the ensuing year.

BOSTON AND MASSACHUSETTS.

WEEK'S DEATH RATE IN BOSTON.—During the week ending April 17, 1920, the number of deaths reported was 246 against 226 last year, with a rate of 15.87 against 14.80 last year. There were 38 deaths under one year of age against 27 last year.

The number of cases of principal reportable diseases were: Diphtheria, 27; scarlet fever, 61; measles, 273, whooping cough, 58; typhoid fever, 2; tuberculosis, 55.

Included in the above were the following cases of non-residents: Diphtheria, 2; scarlet fever, 7; whooping cough, 1; tuberculosis, 4.

Total deaths from these diseases were: Diphtheria, 2; scarlet fever, 6; measles, 3; whooping cough, 3; typhoid fever, 1; tuberculosis, 25.

Included in the above were the following non-residents: scarlet fever, 5.

Influenza cases, 12; influenza deaths, 1.

SOMERVILLE MEDICAL SOCIETY.—The following resolutions were unanimously adopted at the meeting of the Somerville Medical Society held April 8, 1920:

Whereas a bill to extend the law requiring the vaccination of children who attend the public schools to the children who attend private schools was under discussion in the Massachusetts State Senate of April 3, 1920, and

Whereas the measure is not a measure of individual rights, but is a measure looking to the protection of the health of the whole community, and

Whereas Senator Joseph O. Knox of Somerville was active in the defeat of this bill and was also active in the support of a bill to repeal the present laws in regard to vaccination,

Be It Resolved, that the Somerville Medical Society places itself on record as advocating without qualification vaccination of all school children as a protection to the community against the ravages in smallpox;

Resolved, that the elected representative of the people who allows his personal feeling to influence him on public measures betrays a trust of the peoples.

Resolved, that the Somerville Medical Society express its condemnation of the actions of Senator Knox as a betrayer of the trust of the people;

Resolved, that the copy of this resolution be placed on the records of the Somerville Medical Society and that copies be sent to Senator Joseph O. Knox, to the representatives in the General Court from Somerville and to the press of Boston and Somerville.

E. H. Robbins, *Sec'y.*

The Faulkner Hospital.—The fifteenth annual report of the Faulkner Hospital, Jamaica Plain, describes the work of the Hospital for the year ending May 1, 1919. During that period the influenza epidemic constituted one of the most serious problems with which it was necessary to deal. For a month in the autumn the hospital was practically given over to the care of influenza cases, and it was necessary to close the Maternity Building from September 19 to October 15. A number of the hospital nurses contracted the disease, and three gave their lives as a result of service to influenza patients. Fourteen graduate nurses served overseas and five of the regular medical and surgical staff were absent on war service. During the year the experiment was tried successfully of having a fourth-year medical student live at the hospital and attend to the routine laboratory work. The Faulkner Hospital Aid Association has undertaken to make the greater part of all the surgical dressings used in the hospital. The hospital is in urgent need of another building for the accommodation of its nurses; the Nurses' Home can provide for only nineteen of the total average of thirty-seven nurses in the service of the hospital.

There were treated altogether a total number of 1,015 patients, 949 of whom were admitted during the year. There were 43 deaths; 341 surgical cases, 226 medical and 191 maternity cases were admitted; 191 babies were born during the year at the hospital. The annual report contains statistics concerning the medical and surgical diseases and operations.

Sale of Army Medical Supplies.—The surplus property division of the Quartermaster General of the Army offers for sale miscellaneous drugs, surgical instruments, hot water bags and hospital equipment to State and municipal hospitals, free clinics and similar institutions, and to persons who served in the Army, Navy, Marine Corps, or the Coast Guard of the United States during the war and who are at the time of the sale licensed to practise medicine. Orders will be received, beginning April 22, 1920, by the Surplus Property Officer, Army Supply Base, South Boston, Administration Building, Room 226.

Baby Hygiene Association.—At the annual meeting of the Baby Hygiene Association of Boston it was reported that over ten thousand babies were cared for during the year 1919 at a total expense of $68,038. Twenty stations are in operation in various parts of the city and the staff includes fifty physicians, nurses, and dietitians. There were made 109.732 visits to homes of children and nearly 50,000 children were in attendance at the conferences. The Association has given considerable attention to child dietetics during the past year, and plans have been completed for extending this work.

Dr. Fritz B. Talbot was reëlected president of the Association, Charles E. Mason chairman of the trustees, Hugh Nawn secretary, and Charles E. Cotting, Jr., treasurer. Mrs. J. Gardner Bradley and Miss Esther G. Barrows were elected trustees for a three-year period.

Harvard University Faculty of Medicine.—A meeting of the Harvard University Faculty of Medicine was held on April 27 for the award of honors to students of medicine. An address was delivered by Roscoe Pound, Ph.D., LL.M., LL.D., D.C.L., Dean of the Faculty of Law, Harvard University. Diplomas were presented to students of the first rank in the second, third, and fourth classes by Dean Edsall. After the meeting an informal reception was held by the Students' Association.

Springfield Academy of Medicine.—The annual meeting of the Springfield Academy of Medicine was held in Springfield on April 13, 1920. An address was made by Dr. Richard M. Smith of Boston on "Some Common Diseases of the New Born." Officers were elected for the year 1920-1921.

Hampden District Medical Society.—The annual meeting of the Hampden District Medical Society was held at the Springfield Academy of Medicine in Springfield on April 20, 1920. The following papers were read: "Carrel-Dakin Treatment," by Dr. J. M. Gilchrist; "Lethargic Encephalitis," by Dr. F. D. Jones; Report of a Series of Gastrointestinal Cases, by Dr. A. G. Rice. Officers were elected for the ensuing year.

Censors will meet for the examination of candidates at the Springfield Academy of Medicine on May 6, at 4 P.M.

MASSACHUSETTS SOCIETY FOR MENTAL HYGIENE.—The following resolution on the death of Dr. Elmer Ernest Southard has been adopted by the Executive Committee of the Massachusetts Society for Mental Hygiene.

The directors of the Massachusetts Society for Mental Hygiene desire to express their deep sorrow and their great sense of loss in the death of Professor Elmer Ernest Southard. To many of them he was a warm personal friend whom they will sorely miss. His great natural abilities, his extraordinary powers of insight and deduction were most valuable to the society, in which he took an active and stimulating interest.

The directors feel that they have lost not only a most valuable advisor and colleague but one on whose sympathy and friendship they could always depend.

NEW ENGLAND NOTES.

NEW ENGLAND WAR RELIEF FUND.—The following amounts have been announced by various New England War Relief funds:

French Orphanage Fund	$579,761.87
American Committee for Devastated France	199,521.54

Obituaries.

WALLACE HARLOW DEANE, M.D.

DR. WALLACE HARLOW DEANE, a well-beloved practitioner of Springfield, died in that city April 14, 1920, aged 67 years. He was born in West Hartland, Connecticut, attended Wilbraham Academy and graduated M.D., at the Medical School of Yale University in 1877. Dr. Deane settled in Blandford where he was regarded as one of the best all-around country practitioners in that neighborhood. Moving to Springfield in 1887, he joined the Massachusetts Medical Society and continued in active practice until his death, devoting much attention to the care of children. A very positive man, he was lacking somewhat in the polish of cities, but able, fearless and discriminating beyond the ordinary. Pneumonia, following the strain of an arduous practice during the influenza epidemic, was the cause of his death. He is survived by a sister and two brothers.

GEORGE L. UNDERWOOD, M.D.

The subject of this sketch, who recently died in Belmont, was one of the most versatile members of the medical profession of a former generation. He graduated from Harvard College in 1852 and from the Harvard Medical School in '58. Soon afterwards he was appointed superintendent and resident physician at the State Hospital at Rainsford Island, a position that he filled most efficiently until the institution was given up to other uses. He then practiced in Boston for more than thirty years, until compelled to retire by reason of ill health. Practical, resourceful, equal to any emergency, he was an accomplished physician and a most satisfactory consultant.

Dr. Underwood was especially clever in diagnosis and in the use of drugs. The writer is indebted to him for his method of treating senile gangrene and phagedenic ulcers with small, tonic and continuous doses of opium, as well as the value of castor oil in dyspepsia and diarrhea of certain characters. Various methods of treating disease, learned from him, have stood the test of many years' experience. A clear thinker, a close observer, a safe adviser.

His mechanical genius was varied and extensive. He made many of his surgical instruments and appliances. Nothing in relation to his professional needs phased him. The Underwood ether inhaler was in vogue in this vicinity for several years. He also invented a mannikin having hinged and colored panels representing the anatomy of important surgical regions of the body for use in teaching medical students.

While Dr. Underwood gave up Art for Medicine in his early life, yet he never entirely abandoned the calling in which he was much interested, but spent more or less of his time in sketching and in painting in water colors. Some of his work is still extant among his friends and possesses a good deal of merit. He was also skillful at wood carving and did something in modelling. On the advent of the dry plate in photography, he took up this art and in the early days made and coated his own dry plates. He also built his own cameras and was one of the first to use an instantaneous shutter, planned after his own ideas. He perfected a form of shutter, the curtain having an aperture, similar to one that was afterwards used and patented by one of the large photographic manufacturers.

As a young man, the Doctor was much interested in Natural History. He collected a large number of the smaller New England birds, using therefor a blowgun, like a large beanblower, about nine feet in length with balls of putty for ammunition. In this manner he secured birds as large as the golden-winged woodpecker. Being an expert taxidermist, he mounted and placed these birds himself, even manufacturing, true to life, their glass eyes. Furthermore, he made the cabinets in which to mount and preserve them. He was also an adept at coloring lantern slides and was one of the first to find out by experiment and to use the methods of laying on the colors that are used in Japan today.

Dr. Underwood was an omnivorous reader in English, Latin and French. He read the Latin Bible through several times. He was a man of wide intelligence. Positive in his opinions, he had the courage of his convictions. He shunned publicity, wrote little, was not prominent at medical or other meetings, and declined hospital positions that were at his command. He was kind, thoughtful, affectionate, and a most interesting companion; loyal to his friends, to his patients, and to his profession. An invalid for some years, yet he was seldom, if ever, despondent. He took a philosophical view of life, with the Golden Rule as his guide. He died in his sleep, as he would have wished, and has left in the minds of his friends a great admiration for his talents and a high appreciation of his fine character.

George W. Gay, M.D.

Miscellany.

REPORT OF THE JOINT COMMITTEE ON STATE AND NATIONAL LEGISLATION OF THE MASSACHUSETTS MEDICAL SOCIETY AND THE MASSACHUSETTS HOMEOPATHIC MEDICAL SOCIETY.

Vaccination. House 233, requiring vaccination of children attending private schools, was reported unanimously by the Committee on Public Health on March 29. On March 31, it was defeated by the Senate by a vote of 25 to 11.

The petitioners for House 822, providing that compulsory vaccination of children attending public schools be abolished, were given leave to withdraw by the Committee on Public Health on March 31. This report was accepted by the Senate on April 6 by a vote of 25 to 2, and was accepted by the House on April 9.

Thus both bills were killed.

Re Medical Education.

House 1173, providing for two years college training in chemistry, physics, and biology before entering on the study of medicine, was heard by the Committee on Public Health and was referred to the next General Court on March 29. This report was accepted by the Senate on March 31 and by the House on April 5. Thus the bill was killed.

Physical Training in Schools.

The Chamberlain bill, which had been drafted to meet all the objections raised against the various measures first introduced, was defeated in the Senate by a vote of 22 to 12. The vote was as follows:

For rejection—Senators Butler, Churchill, Cooke, Curran, Donovan, Emery, Foley, Griswold, Hardy of Berkshire, Hardy of Worcester, Knox, Martin, McLane, Moulton, Nelson, Prescott, Putnam, Quinn, Reed, Tarbell, Walsh and Winchester—22.

Against rejection—Allen, Bliss, Carrick, Cassasa, Chamberlain, Dahlborg, Finkel, Gibbs, Loring, McIntosh, Nason, Pearson—12.

Paired, for rejection—Senators Curtin, Halliwell; against rejection — Senators Wells, Weston.

Thus this bill was killed.

Maternity Aid.

Senate 506 has been drafted from the various measures proposed and was reported on April 23 by the Committee on Public Health and Social Welfare sitting jointly.

The new bill omits any provision for medical attendance at the time of confinement except in abnormal cases.

Essentially the bill provides for prenatal care, which has been the main factor in reducing maternal and infant mortality.

The bill is printed in full below in order that physicians may consider it fully.

AN ACT

To provide Adequate Care for Mothers and Children during the Maternity Period.

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

Section 1. From and after the first day of December, nineteen hundred and twenty, the department of public health shall have charge of the administration of maternity care, in accordance with the provisions of this act.

Section 2. The said department is hereby authorized to furnish, in addition to advice and instruction, nursing and expert prenatal care to pregnant women at home, at some hospital or local clinic at the option of the expectant mother; also nursing or hospital care at the time of confinement if in the judgment of said department the safety of the mother or child requires such care.

Section 3. In order to be eligible for the benefits of this act, the expectant mother must agree to accept and carry out such instructions as, in the judgment of the said department, her case requires. All applications for care under this act may be made directly to the said department or through any local board of health or practising physician.

Section 4. Maternity cases under this act shall not be given to a city or town physician, in his or her official capacity. The recipient of maternity care under this act, if remaining at home, shall be allowed in all cases to choose her own physician, subject to said physician's acceptance of the fee schedule for such cases, and other rules and regulations of the said department governing this act.

Section 5. The said department shall make, and may, from time to time, add to, alter, amend or repeal, such rules and regulations as may be necessary to carry into effect the provisions of this act.

Section 6. The said department shall report to the general court on or before February first, nineteen hundred and twenty-two, with such recommendations for the further extension of maternity care during the natal and postnatal periods and for such other assistance to expectant mothers, as it may deem advisable.

Section 7. For the purpose of carrying out the provisions of this act, the said department may expend from the treasury of the commonwealth a sum not exceeding two hundred thousand dollars.

It is obvious that if this bill is passed and proves a success other steps must follow.

James S. Stone,
Secretary.

Correspondence.

DOCTORS' FEES.

3 Linden Street, Melrose Highlands, Mass.

Mr. Editor:

Having gone into "personnel" work, I am now making studies of the shortage of women workers in all lines of work, from the Atlantic to the Pacific ocean. I have to interview many manufacturers, and I am surprised at the attitude many of them take toward the medical profession, having been told over and over again that the cheapest kind of labor one can obtain nowadays is the services of physicians.

Last October, 1919, when the National Safety Council met in Cleveland, Ohio, I was present at most of the meetings; even then some manufacturers would laugh when asked how much one ought to pay a physician for doing medical work in their factories. This question of low wages does not affect me personally, but it does hurt to be told so many times that doctors are the only ones who will work "*cheap.*"

Is not a doctor "worthy of his hire," or is it because they have no business acumen that they can be hired to do important work for almost nothing when factories have to pay other workers good wages to keep them?

Very truly yours,
Alice S. Cutler, M.D.

SOCIETY NOTICES.

New England Pediatric Society.—The sixty-fourth meeting of the New England Pediatric Society will be held at the Boston Medical Library, on Friday, May 14, 1920, at 8.15 p.m.

The following papers will be read:

1. The Chemical Factors Involved in the Production of Acidosis, Reginald Fitz, M.D.

Discussion opened by A. W. Sellards, M.D.

2. Recurrent Vomiting as Seen in Private Practice, Richard M. Smith, M.D.

Discussion opened by A. N. Broughton, M.D., P. H. Sylvester, M.D.

3. The Pathology of Dental Infections in Childhood (with lantern slides), Kurt H. Thoma, D.M.D.

Discussion opened by W. C. Miner, D.M.D.

Fritz B. Talbot, M.D., *President*,
Lewis Webb Hill, M.D., *Secretary*.

Norfolk District Medical Society.—Seventieth annual meeting, American House, Boston, May 13, 1920.

Order of Exercises: 5.30 p.m. sharp, business meeting.

1. Minutes of previous meeting.
2. Report of Committee.
3. Report of Treasurer.
4. Election of Officers.
5. Incidental Business.

Dinner, 6.15 p.m. sharp.

After the dinner the entertainment committee will present a short play in six scenes entitled "Breaking into the Army" or "It's a Great Life if You Don't Weaken." An assessment of two dollars will be made for the dinner and entertainment.

F. P. Denny, *President*,
Bradford Kent, *Secretary*.

RECENT DEATHS.

Dr. William Henderson Ruddick, a retired Fellow of the Massachusetts Medical Society, died at his home in South Boston, April 8, 1920, at the age of 75. He was a native of Moncton, N. B. He had served in the Civil War and took up his residence in South Boston at its close, studied at the Massachusetts Institute of Technology, and graduated from Harvard Medical School in 1868. He had been district physician to the Boston Dispensary. He was married in 1872 to Sophia Ada Means, who died in 1901. Two years later he married Margaret Gannon of Charlestown. She survives him.

Dr. Mary Parker died on April 8, at her home in Waltham. Dr. Parker was born in Yarmouth, the daughter of Alfred Wright Parker. She was a graduate of the Woman's Medical College in Philadelphia, and in 1910 was graduated from the Hahnemann Medical College of Chicago. She practised for several years in Framingham and later in Waltham. For some time she had conducted clinics at the Massachusetts Homeopathic Hospital. Dr. Parker is survived by her aunt, Miss Charlotte Hallett of Waltham.

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Original Articles.

DISTURBANCES CAUSED BY PROTEINS.*

BY J. A. TURNBULL, M.D., BOSTON.

As a profession our object is protection of the human body from disease or disturbance of its' normal functions. Certain disturbances brought about in the body are caused by proteins or their derivatives. Such conditions may be designated as hypersensitiveness, protein sensitization, anaphylaxis or allegry. Proteins which produce these conditions are toxic to those patients who show a sensitization to the different proteins. These sensitive proteins either gain an entrance in the body in their foreign state, by this I mean undigested form, and thus being foreign to the blood stream and body fluids, act as a foreign body. This foreign substance in the body fluids parenterally digested, may produce substance or substances which are abnormal to the body fluids, or by their presence there, either as an unfriendly element, or by an excess of such material, or by its action on the system, produce either a diminished amount or an excess of proteolytic ferments, which produce substances inimical to the body. This same condition may apply to those which enter through the gastrointestinal tract.

We may have either an excess or deficiency of digestive ferments which will produce abnormal constituents, causing disturbances of the intestinal tract. Such substances on absorption are either neutralized or made inactive by the body fluids or without the presence of an enzyme to act as a neutralizer of this absorbed material. This substance is carried throughout the body causing general disturbances or circulates through the body until it meets a part or organ upon which it manifests its dynamic action, until its force is spent. This action may manifest itself in different ways on various organs of the body in different individuals. These disturbances take place either through their action on the muscular tissue of the walls or nerve apparatus of the blood vessel, or on the heart muscle, which is attended by an alteration of the vasomotor system, which responds in different ways, according to the nature and degree of dynamic irritation and irritability of the vasomotor system. These sensitizations are brought about by proteins of animal or vegetable origin; these include the bacterial proteins, or we may have proteins of these two kingdoms acting on the same individual, each manifesting the same disturbance or different action on various parts of the body.

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* Read before the Worcester District Medical Society.

Sensitizations may be either hereditary or acquired. We may have hereditary hypersensitiveness, with later in life an additional acquired sensitiveness. The hereditary form may be transmitted from mother to offspring, passing through a number of successive generations, or we may have an absence in a few generations with an appearance later, showing a similar condition in each or a sensitiveness manifested in various forms in different generations. Thus, we may have different individuals of the same family or of different generations subject to disturbances of the respiratory tract. One may have perennial vasomotor rhinitis, another seasonal hay fever, while the third may have bronchitis or bronchial asthma; or the individuals of the same family may have seasonal hay fever occurring at the same time or different seasons, as, they may have a fall type of hay fever, or one the spring, and the other the fall type; or, on the other hand, while one shows disturbances of the respiratory tract, another generation or member of the same family may have anaphylactic disturbances manifested by headache, gastrointestinal, dermatological, or arthritic symptoms; or we may have one or more of these disturbances exhibited in the same individual. As an illustration of these remarks, one member of a family has vasomotor rhinitis when near or driving behind a horse, while another has immediate attacks of asthma; or we may have nasal disturbances and bronchial asthma in the same case, while another may have respiratory disturbance and cutaneous manifestations. Acquired sensitizations may be produced as follows:

1. Some intercurrent disease, infectious, prolonged illness, over-exertion, worry.

2. Absorption of bacterial products from some focus or foci.

3. Over-eating or repeated eating of certain articles of food over a long period of time, or it may be due to eating certain foods too soon after some serious illness or exhaustion. We may have a combination of one or more of these sources in the same individual.

The avenues of entrance of proteins are:

1. Respiratory.
2. Gastrointestinal.
3. Focus or foci of infection.
4. Cutaneous.

We may have one or more of these avenues combined; as, respiratory and gastrointestinal, respiratory and foci of infection or respiratory gastrointestinal, cutaneous and foci in the same individual.

From these avenues of absorption their action may be manifested by headaches, vasomotor rhinitis, hay fever, chronic bronchitis, bronchial asthma, hyperacidity, nausea, vomiting, flatulence, constipation, diarrhea, gastrointestinal colic, which in some cases may stimulate gastric ulcers, acute intestinal obstruction, acute appendix, or we may have various arthritic manifestations or cutaneous disturbances, as, eczema, urticaria, prurigo, erythema multiforme, angio-neurotic oedema.

Some are moderately resistant, others extremely sensitive. Each individual is profoundly different from his neighbor, each has been anaphylactized to different degrees against different substances, each has his humoral as well as his psychological individuality to differentiate him.

Hay fevers are produced by the pollen proteins of plants; the extent of the activity of the pollen varies according to the size and weight, which depends on the distance they may be carried by the wind. The lighter pollen, as, grasses and ragweed, being carried farther, consequently a greater range of activity than heavy pollen, as that of corn. Another property on which the activity depends is shape, the spherical which acts by absorption of its protein alone, containing larger quantities of protein than the spiculated pollen, which acts directly by the irritation of the spicules and absorption of its proteins. The following table shows plants which produce hay fever, season of occurrence and their duration:

Plant	Season	Duration
Pussywillow	March	2 weeks
Birch	April	3 weeks
Oak	May	2 weeks
Maple		
Apple		
Cherry		
Plum		
Pear		
Grasses	June July	4–7 weeks
Rose		
Ragweed	Aug. and Sept.	3–10 weeks
Goldenrod		
Cocklebur		
Sunflower		

Those having the August and September variety form the greater number of sufferers; next in order are those due to the various grasses of June and July; then the birch, oak and maple of April and May. Those affected by the pollen of the fruit plants are less in number.

The duration of the pollen activity of the various plants varies from two to ten weeks. Some patients may be disturbed by the pollen of one particular species and season, as the ragweed of August and September, while others are sensitive to several pollens, covering a period of different pollenating seasons, thus beginning with birch of April, later being affected by the ragweed of August and September, or there are some whose symptoms begin with the birch of April and are continued through the different pollenating seasons. In these cases, the continuation of symptoms is due either to bacterial products or food proteins. The treatment of hay fever cases: (1) they may be sent away from the districts of wind-borne pollens either to mountainous areas, free from pollens, or on an ocean voyage; (2) or be desensitized to the pollen to which they are sensitive. In desensitizing, begin treatments with small doses of the pollen protein solution, subcutaneously, gradually increasing the dose, according to the local action, which shows by an erythema at sight of injection, avoiding too great reaction. By this, I mean, an erythema greater than a half-inch in diameter. If after a treatment the erythema is greater than a half-inch, repeat the same dose at next visit; if less, the dose may be increased from one-half to double the previous dose. Treatments are given from three to seven-day intervals, depending on the time of beginning the treatments. If the treatments start ten to twelve weeks previous to the pollenating season, may give doses at seven-day intervals; if starting later, lessen the intervals. In some cases, it is well to stop treatments previous to pollen liberation; others do better by continuing treatments during the season. I have seen excellent results with some cases where treatment was begun after onset of symptoms. These cases in which there is a continuation of symptoms beyond the pollenating season, due to action of bacterial products, may be treated by desensitization with bacterial extracts.

I am now using bacterial extracts from which the fats and waxes have been removed, making solution of these and using subcutaneously. In other cases, the continuation of symptoms may be due to food products. In these the omission of the sensitive foods from the diet will relieve patient from symptoms; in others we may have both a bacterial and a food product cause of symptoms. These are treated by omitting sensitive foods from the diet and treatment with sensitive bacterial extracts. Some of the hay fever cases develop asthma with their seasonal attacks, which is due to the action of the pollen or the pollen protein and bacteria on the respiratory tract. The action of pollen protein, besides the local disturbances of the respiratory tract, produces malaise, fever and chills, gastrointestinal disturbances with anorexia. A few may have local skin disturbances, as, erythema and urticaria, due to the pollen protein local action on the skin. I believe that in asthma and bronchitis there is produced the same condition upon the lower respiratory tract that takes place in the nose in vasomotor rhinitis; *viz.*, a boggy, oedematous condition of the mucous membrane with a watery exudate and considerable secretion of mucus. I am well aware that the nasal mucosa and erectile tissue of the turbinate is not so closely bound down and allows a greater opportunity for oedema than the mucous membrane of the bronchi and bronchioles. Notwithstanding such an anatomical arrangement throughout the large bronchial area that a vasodilatation occurs, allowing an exudate of a watery secretion and a stimulation of the mucous gland, thus causing considerable oedema of the lower respiratory tract. With this diminished diameter of the bronchial tube and consequently pressure on the nerves of the oedematous area, which no doubt acts by producing a spasmodic contraction of the bronchial muscles. I have drawn these conclusions from: (1) auscultation of the chest of an asthmatic during an attack and from the expectoration, (2) by the action of the adrenalin when given for relief of attack of asthma, (3) through the production of asthma by injection of a sensitive pollen sufficient to produce an anaphylactic shock.

Anaphylactic shock may be produced by the injection of a greater amount of a sensitive protein than the system can take care of without production of general systemic disturbances, which are very uncomfortable and alarming for patient and physician.

These disturbances are manifested by a feeling of pressure in the head, vertex being blown off, roaring in the ears, injection of the conjunctiva, blocking of the nose, and sensation of laryngeal and suprasternal obstruction, difficult respiration both in inspiratory and expiratory, wheezing, chest râles, short repeated expiratory cough, oedema of the eyelids, erythema and swelling of the forehead, face, neck, chest, extending over the entire body with severe itching and urticarial patches, some of the patches being several inches in area, followed by a watery diarrhea with frequent passing of large quantities of urine. This condition is a pitiable sight and patient unable to talk on account of respiratory discomfort, but the whole category of symptoms and relief of the distress and anxiety may be obtained within five to ten minutes by the use of adrenalin chloride 1-1000 10-15 minims subcutaneously, intravenously or intramuscularly.

I believe that with one taking into the gastrointestinal tract proteins to which we are sensitive, we have the same vasomotor disturbances of different parts of the whole intestinal tract; *viz.*, vasodilatation, similar to that which occurs in the nose in vasomotor rhinitis, or on the cutaneous surface when we obtain a positive reaction to a sensitive protein; *viz.*, an erythema or wheal or erythema and wheal combined. With this oedema of the gastro-intestinal mucosa and submucosa, we may have a hyperacidity, or in some cases, a hypoacidity. These changes taking place in the stomach or duodenum may stimulate a gastric or duodenal ulcer, and in the intestinal tract an acute obstruction or acute appendicitis.

Case 1. Female, age 48. When sixteen years of age, frequent attacks of sneezing, watery nasal discharge, itching of the eyes, ears, nose, and throat, with marked dryness of the throat. When 18, began suffering with asthma, which attacks increased in severity and frequency; at same time disturbed with heart burn, headaches, flatulency; noticed when working with wheat flour, brought on at once sneezing, and within a few minutes, asthma. These symptoms were so disturbing that patient would tie a folded wet towel about the mouth and nose when working with flour. Patient gave cutaneous reactions to wheat, rice, corn, barley; negative to oats. With omission of these articles from diet all nasal respiratory and gastrointestinal symptoms disappeared.

Case 2. Boy, age 5, asthma and eczema since one year of age, increase in frequency of attacks of asthma and larger area affected by eczema as the child grew older. Mother was positive eggs brought on attacks, and if child showed no reaction to eggs, would not have faith in tests. Positive reaction to wheat, rice, chicken. Negative to eggs and other foods. Wheat, rice, chicken omitted from diet, one egg eaten every day, complete relief from asthma and all cutaneous disturbances. I mention this case, on account of positive statement of mother, that eggs disturbed child, which in this case was not so, but the child usually had egg with wheat or rice, these being the disturbing elements.

Case 3. Male, age 42, vasomotor rhinitis, and asthma for three years. Positive to beef, pork, salmon. Omitting these from diet, complete relief from symptoms. After three months patient returned, stating for three successive mornings suffered from nausea, abdominal pain and colic. On third morning distress was so great, patient was incapacitated for work. Investigation showed he had been eating a breakfast food which, on testing, gave positive cutaneous reaction. Found this food contained wheat, oats, corn, rye, barley, linseed. Negative reaction to wheat, barley, oats, corn, rye. Positive to linseed, the latter being omitted from diet; no return of symptoms.

Case 4. Female, age 48. Asthma since 20 years of age, nasal polyps, which recurred after frequent removals. Positive reaction to cheese, lamb, pork, chicken, and a few of the fish. After omitting these from the diet, no asthmatic disturbances. Being free for three months, I instructed the patient to eat plenty of lamb. One lamb chop eaten at 1 p.m. produced by 7 p.m., dryness of the throat, blocking of the nose, sneezing, watery nasal discharge, lachrymation. Patient did not consider these symptoms having any associations with asthma; so, forty-eight hours later, ate two lamb chops at 1 p.m. At 7 p.m., same symptoms as with one lamb chop; at 9 p.m., asthma lasting three hours; next morning eczema over entire body, which patient never had before. Omitted lamb chop from diet, eczema disappeared. I mention this case to show nasal disturbances produced by one lamb chop, a larger amount producing both nasal and bronchial, and eighteen hours later, cutaneous disturbances. This eczema was a new condition for patient, no doubt brought on by the absence of lamb from diet for three months, which lessened the antibodies the lamb previously eaten had formed, and with these diminished antibodies and ingestion of this amount of lamb, there was a liberation of a large amount of foreign protein, which exerted its influence on the respiratory tract, also, electing the cutaneous surface as a new manifestation. Later this patient was treated with lamb protein solution hypodermically, at weekly intervals, beginning with small doses, gradually increasing the dose, according to local reaction. After a number of injections, was desensitized to lamb and could partake of it without any disturbances.

Case 5. Child, age 5. Eczema two months of age, entire body affected, skin indurated, rough and scaly. Mother stated, least amount of egg in the mouth would cause swelling of the tongue and mucous membrane of the mouth. Beef broth increased the eczema; when near fish, would suffer from acute exacerbation of eczema. Positive reaction to egg, beef, haddock, cod, salmon, halibut, smelts.

Case 6. Female, age 24. Since 14 years of age, after eating any of the vertebrate fish, as haddock, cod, filet of sole, salmon, one hour later will have dryness of the throat, sneezing, swelling of the eyelids and cheeks, erythema of the face and neck, with nausea, vomiting, gastrointestinal, lasting from two to four hours. Since twenty-two years of age, halibut has produced the same symptoms which previously had no ill effects. These fish gave marked positive skin reaction. The following six weeks, after making tests, patient ate halibut and cod three or four times without disturbances. Here, no doubt, antibodies had formed, due to the amount absorbed from the skin tests, which was sufficient to neutralize the foreign protein, which gained an entrance to the body tissue. After ingestion of these fish, after six weeks, had the usual train of symptoms, when eating the vertebrate fish. Various vegetables, fruits, nuts, will produce disturbances in some individuals.

Lately we have seen articles in the press and journals regarding peanut bronchitis, from the lodging of a peanut in the bronchi; in this case the symptoms are produced by a foreign body. I have a case in whom I can produce bronchitis and asthma, by eating peanuts, not due to the lodging of a foreign body in the bronchi, but by absorption of peanut protein. Among those of the inhalation type of disturbances, besides the typical hay fever cases, are those produced by various animals, namely, the horse, cow, cat, dog, rabbit, guinea pig, chicken, in fact any fowl or animal, even to the mouse. In these cases we have the inhalation of the dandruff or hair protein, which causes disturbances. Patient may be sensitive to the dandruff of an animal and not to the serum of that animal, and *vice versa* to the serum and not the dandruff, or, may be sensitive to both dandruff and serum. In case of one being sensitive to the horse dandruff and not to the serum, there is no disturbance produced by the use of diphtheria antitoxine, but if the patient is sensitive to horse serum, would have anaphylactic shock, and in some case death, following injection of diphtheria antitoxine; same would apply to the use of the serum of any animal. In case of asthmatic disturbances due to dandruff of animals, the patient may either avoid those animals, or we can desensitize the patient to the protein dandruff of those animals, by the hypodermic use of small increasing dose of the susceptible dandruff protein.

The disturbances produced by proteins are many and varied. I do not wish to leave the impression that all ills are due to proteins, but that many conditions which in the past we have been unable to locate any particular cause and have called such patients neurasthenics.

I would say, investigate the protein sensitization, and when I say, investigate, I mean go into the case thoroughly, not with half a dozen or so of proteins, but many. Such investigations will be time well spent, not only for the benefit of the patient, but satisfaction of the physician.

USE AND ABUSE OF MECHANICAL SUPPORTS IN ORTHOPEDIC CONDITIONS.

By Herman W. Marshall, M.D., Boston.

Mechanical braces and appliances continue to be objects of very considerable condemnation or approval; yet the question naturally arises why favorable or unfavorable comments should not be transferred from apparatus itself to physicians' methods of prescriptions since successes and failures depend on doctors' ideas of suitable construction and fitting of braces, and on their judgments of patients' capacities for using apparatus properly.

Mechanical supports are reliable and effective when used rightly, and an appropriate time has arrived, perhaps, to rediscover their numerous advantages, and to compare in frankly one-sided manner for sake of emphasis their good features with drawbacks or failures resulting from all other measures.

Some persons will consider this rehashing of old facts undoubtedly of comparatively little value in contrast to pressing forward on the crest of the foremost wave of medical progress. Nevertheless, the writer takes the stand that there can be too rapid development for best quality of medical attainment, and best balanced judgments, changes taking place within the domain of medicine being comparable to rapid changes occurring in many other departments of the world's activity now. So it seems there shouldn't be added to recent industrial instability and undesirable lawlessness any harmful medical advances that assume a malignant phase because of their quick unbalanced growth. This paper aims therefore at presenting old facts in new lights and at consolidating gains previously made.

Leaving aside the topic of artificial protheses which are designed to replace parts of the body that have been lost, attention will be directed solely to use of mechanical appliances in injuries or diseases of bones, joints and muscles, omitting army contrivances newly designed or resurrected for emergency use in recent injuries.

Narrowing down the discussion to concrete examples, and first to a very common severe injury, namely, fracture of leg bones at the ankle, the following facts about this one topic will be reviewed.

Everyone is agreed that the fractured parts should be put at rest completely during early stages of repair, that deformities should be corrected as quickly and perfectly as the damage permits, and that there must be limbering up measures instituted later to restore normal functions. Beyond this point diversity of opinion generally arises. Some doctors insist on very early passive motions before bony fragments have united firmly. Others insist that early voluntary movements are especially desirable. Physical therapeutists preach the value of baking, electricity and massage. Surgeons advocate operations on slowly uniting fractures. Constitutional tendencies preventing quick recoveries are fought with internal medical measures and hygiene. Braces are of value when ligaments about ankle joints remain, or become, chronically weakened and stretched. Braces provided with arrangements for limited motion of ankle joints are especially useful when upper limits of dorsiflexion of feet continue to cause pain. Braces designed properly afford protection enough not infrequently for slowly uniting or diseased bones at the same time they permit freedom sufficient for accelerated restoration of functions in the soft tissues.

It would be possible to collect numerous cases in which massage and exercises have been given too early, or baking has aggravated rather than lessened symptoms, also cases in which surgery has delayed recovery or plaster casts have afforded too much protection. Other patients who have received electrical treatments for restoration of muscle function have obtained benefit for muscles from the active contractions thus induced, yet the latter have influenced partially united or chronically irritated bone fragments in turn equally harmfully.

To this list might be added the very considerable number of patients who have recovered finally with use of mechanical supports after one or several of the various other therapeutic means have failed.

It isn't necessary to cite actual cases to make clear the point that disproportionate development of any single method, to the exclusion of the others, can be a really malignant tendency at the present time, and that it should be combated increasingly by balanced considerations of the whole field. Medical requirements among different cases in reality are constantly shifting ones, damaged bones, stiffening muscles, strained ligaments, irritated synovial linings, in turn and in no fixed order demanding foremost attention.

Braces should not be condemned dogmatically and discarded completely as is so often done because of their obvious limitations; for with them can be combined numerous features simultaneously that are otherwise unavailable. They can be constructed so as to protect weakened bones and to prevent localized synovial irritations, while permitting limited or unlimited use of certain groups of muscles and ligaments as desired. Condemnations and approvals therefore should be shifted to physicians on whom responsibilities rightfully rest.

Use and abuse of metal arch supports for flat feet is another topic that can be explained briefly.

Merits of arch supports were recognized so quickly and widely that their sale became commercialized to a harmful degree. Then when their limitations became widely recognized there was a swinging of the pendulum of favorable opinion somewhat away from metal foot plates to footwear of increased flexibility which exercised instead of rested the muscles of the feet and legs.

Many wearers of plates were benefited subsequently by the wearing of flexible shoes and naturally, yet erroneously, they condemned the supports instead of their doctors or shoe fitters. Many other persons have discovered that extremely flexible shoes are not suited to their muscle strengths, and with this revelation sufficient data have been assembled for correct understanding of the situation.

Plates are beneficial and convenient during earlier stages of foot weakness in order to rest feet *temporarily*, while exercises and flexible shoes are essential for best results after a preliminary resting period. The main difficulties have been that neither patients nor prescribers of plates or shoes have realized fully what had to be expected, and they have not known exactly how or when to make purposeful changes from one to the other method until normal states have been restored. They have not understood fully that either supports or exercises can be abused easily. The responsibility for poor results, however, lies with physicians, patients and shoefitters and appliances themselves should not be condemned.

Back strains and their treatments have been launched on a course apparently similar to the one travelled in development of knowledge of foot strains.

There are almost as many incomplete one-phase methods in use with back troubles as there have been in treatment of foot strains. Back supports are permanently attached to corsets similarly as foot plates have been incorporated in shoes without any understanding of the temporary need simply of support in the majority of instances, and numerous patients thus have been made unduly dependent on artificial aids even to weakening their backs still further in this manner. Exercises have been prescribed likewise not infrequently in a one-sided way, which has prolonged instead of abbreviated duration of symptoms. Anatomical postures of backs have monopolized undue attention in a manner that mere flatness of feet was given too much prominence until it was realized that many flat feet are as strong or stronger than some with high arches. Underlying causes for developing musculo-ligamentous weaknesses in backs have been ignored in treatment similarly as analogous causes for muscular weaknesses in foot defects have been neglected.

Too elaborate supports are prescribed sometimes for slight weaknesses, and also too slight supports are given for rapidly developing weaknesses of severe and prolonged courses. Undoubtedly more harm than good has been done by many of these incomplete one-phase methods, yet, as in the previously mentioned illustrations the responsibility rests rightfully with physicians rather than with apparatus. It is not fair to patients nor to reputable medical practice to attempt the use of braces unless their possibilities and limitations are understood and explained to patients who are capable of understanding their situations.

Knees, elbows, wrists, hips, shoulders, and necks each present their special mechanical peculiarities; and similar remarks are applicable to use of apparatus designed for these different regions.

Anterior poliomyelitis, tuberculosis of the spine and of other joints, as well as other very chronic infectious processes of bones and joints, are treated often with mechanical apparatus; and the latter has proved its great worth so conclusively in these types of cases in spite of accompanying discomforts that nothing need be said further in its justification.

It is the class of "simple" muscle or ligament strains and weak, faulty unions in fractures, those cases which sooner or later recover completely, about which doubts and questions now arise. And although causes for fluctuations from time to time in strengths of muscles, bones and ligaments are still obscure, yet at least their existence should be clearly recognized and taken into account in treatment, as is not done often enough now.

Finally industrial accident cases present peculiarities of their own and accordingly deserve special notice.

An injured workman who is drawing compensation from an insurance company for his disability is in a different class as a rule from an injured individual who is suffering from a similar injury without compensation. Malingering tendencies in compensation cases are not so extremely rare, and there are many who are not malingerers who try naturally to make as good bargains as they can with insurance companies. These latter patients coöperate with their doctors, especially if physicians are furnished by the companies, in order to secure all possible benefits; but they will repudiate or minimize benefits of braces in the end frequently when final settlements are being arrived at. Not all patients do this, and there are many varying degrees of the tendency exhibited, yet a sufficient number of cases do exist to influence attitudes of insurance adjusters toward the use of apparatus.

An industrial physician has therefore to be prepared for this additional difficulty, but by being forewarned he can avoid much trouble by a more critical study of his patients and their views before he prescribes supports, and by taking away apparatus entirely from certain patients in the later stages of their care when they begin to "lay down" on the insurance company.

There is a considerable proportion of our foreign born general laborers who do only rougher kinds of work with whom it is folly to fit elaborate or complicated appliances which they cannot use possibly with much benefit. On the other hand, it is advisable not infrequently to prescribe appliances of simple character with preventive ideas in mind.

If patients can be depended on, then belts for weak backs, ankle braces for fractured bones, et cetera, enable workmen to resume their active occupations more quickly than would be safe without such protection. There are justifications for the use of braces under these circumstances that do not exist under other conditions. A protective apparatus frequently is accomplishing its intended purpose, although its wearer, who does not understand its use, complains of the discomfort and says that it is no good. Discomfort of a slight degree that does not prevent a return to work is in reality a benefit if it also prevents undue prolongation of use of supports at terminations of disabilities when patients are lost sight of.

It must be admitted, however, there are wide differences in ways in which industrial accident cases are treated, depending on varying opinions of different insurance companies, since the control of treatments rests primarily with business men and not with physicians, the latter being encouraged to carry out only such medical procedures as are thought to fit best business interests.

Baking and massage constitute a form of treatment which is extensively used with industrial cases, and with great benefit in many instances. It has the advantage of being comparatively inexpensive, and it is relegated not uncommonly to non-medical assistants. Yet any reliable method, however good it is, can be employed very disproportionately as seems to be the case with baking and massage.

Conscientious masseurs work over chronic cases day after day faithfully, making patients feel temporarily a little different during actual times of treatment and without doing recognizable harm. In reality, however, just a little too much is being done frequently to permit periods of freedom from outside disturbance that are so essential for quickest repair; and these patients get well in spite of their treatment rather than as the result of it. At other times, manipulations, baking and massage are persisted in with the best of intentions by non-medical assistants even when patients complain of actual pain and throbbing aches lasting unreasonably long after each treatment, and when it is quite obvious that more harm than good is being done. Disabilities are being prolonged when all that is needed for rapid recovery is less care.

A comparison of mechanical supports with baking and massage shows that apparatus is less likely to be used too much. Supports show their limitations very obviously, and their good features, though existent, are obscured; while baking and massage are apparently simple and frequently effective. Their drawbacks are less clearly recognized and less widely understood, and in consequence they are employed more often to useless, expensive degrees.

The writer has been guilty of fitting braces to industrial patients with unsatisfactory results more times than he likes to admit: and on account of some of the reasons which have been set forth; but fortunately there have been exceptionally good results in a very considerable number of instances after other methods have failed. And the transformation of very few cases which have been considered total permanent disabilities into useful wage-earners overbalances many unsatisfactory results and the cost of much discarded apparatus, so that the weight of opinion is still strongly in favor of use of braces in selected industrial accidents.

Future progress along industrial lines with brace making and fitting depends, therefore, apparently on increased caution in prescriptions by industrial physicians; secondly, on lessening the cost of apparatus to suit its frequently temporary usefulness, retaining effective fitting without elaborate finish that is desirable in apparatus for private patients possessing permanent disabilities; and lastly, on the education of insurance companies to the obscure advantages of medical supports. For they cannot be expected to recognize all merits of mechanical apparatus and its superiorities when these advantages are not fully remembered by the medical profession generally.

Braces may be uncomfortable, their wearers may condemn them, and they may have to be discarded soon; yet notwithstanding these objections they may be no more uncomfortable than a series of painful manipulative treatments which are cheerfully accepted because the latter are understood by patients. Braces may be more efficient than the latter, though braces are condemned, and they may be cheaper in the end, although they are discarded in apparently wasteful fashion. They justify themselves if patients are saved from single unrecognized additional injuries, and they have advantages in being less liable to overuse.

In conclusion, a few illustrative cases will help to emphasize the foregoing ideas.

1. A seventeen-year-old schoolboy developed soreness of his ankle joint gradually, and continued activity in athletics aggravated the condition to degrees demanding adhesive strappings and a plaster cast. The cast allowed complete subsidence of inflammation in a month. The synovitis of the ankle joint was coming back again, following removal of the cast, when the writer first saw the patient. Instead of returning to another cast a steel ankle brace was fitted. This was provided with a limited motion joint that prevented dorsal flexion of the foot beyond a right angle, and in consequence the irritated synovial lining was freed from harmful squeezing of the last few degrees of dorsal flexion. He improved steadily and uninterruptedly, walking naturally without discomfort, with his invisible apparatus, until he recovered completely.

2. A middle-aged insurance man fractured his fibula and strained ligaments about the ankle. After the bone had united there was a feeling of insecurity which prevented resumption of continued walking quickly. An ankle brace was fitted and he soon returned to his usual occupation wearing the brace about two months before he discarded it. He felt confident with the brace on that he would not injure his ankle anew by any misstep.

3. A middle-aged man of average height, good muscular development, with sallow mildly autointoxicated appearance, an electrician by trade, developed chronic flatfoot of severe grade very gradually. He tried many varieties of shoes and plates, and had visited an orthopedic clinic at one of the large Boston hospitals, when he was finally seen by the writer and fitted with a pair of foot plates of the Whitman type. Directions were given him to wear them as much as he could. They made his feet very sore for a while, but he persevered, and gradually forced his feet back toward normal shape and restored muscle balance again in foot muscles. Hip pains, of which he complained, also disappeared entirely and after a number of months he was able to dispense with the plates. His comment on the treatment was that money couldn't pay him for the favorable transformation which had been made in his condition.

The point of interest about this common case lies in the selection of method of treatment. Forcible manipulation of his feet while he was anesthetized, followed by support of plaster casts for two or three weeks, with rest in bed, and terminating with limbering-up measures and plates for the feet could have been tried. Secondly, a series of fairly forcible manipulations and massage without anesthesia would have accomplished the same purpose, presumably, if they were persisted in long enough. The method which was selected was convenient, comparatively inexpensive, and permitted him to continue with his work. It was simple and efficient and preferable for these reasons.

4. A fifty-year-old mechanic was thrown out of an automobile and injured the lower cervical region of his spine. X-rays were repeatedly shown to be negative, and he had been allowed to go without any head support until a visible diffuse swelling appeared in the soft tissues at the back of the neck at its cervicodorsal region. Weakness of arms was developing and there was a beginning of a dragging gait soon after the writer first saw the patient. A steel brace was fitted to support the head and neck and to immobilize the upper end of the spine completely. Leg symptoms promptly subsided and strength of arms increased for a time, but at the end of one year's time there

had appeared considerable irregular atrophy of neck and shoulder muscles. The hands also were still weak and have remained so.

He has improved in general health, walks as much as he desires and tinkers around in a machine shop a little, also does a few things about his home; but he has not been returned to regular labor. The brace is restricting and conspicuous, yet he cannot do without it long, and he is very glad to have it returned promptly whenever it is repaired.

5. A twenty-six-year-old man in average good health fractured his spine slightly at the dorso-lumbar region in a fall of twelve feet. He did not submit to an operation for the purpose of inlaying a bone graft at the injured region of the spine. Instead he continued working at odd jobs of light character from one month's time onward after his accident with the aid of a steel back brace. There was much discomfort at first but he persevered and in six months' time ceased to draw compensation from the company with which he was insured.

6. A heavy man, who was a little past middle age, a laborer, fell and ruptured the quadriceps extensor muscle just above the patella. A weak leg resulted, and he was considered an unfavorable risk for a surgical operation, accordingly he was considered a probable total permanent disability by the insurance company paying him compensation. An adjustable knee splint, which permitted fixation at any desired angle, or free motion as desired, enabled him to return to regular work and ultimately to dispense with the brace entirely a part of the time.

7. An Italian laborer injured his right humerus at the elbow, and extensive hypertrophic bony changes developed that could not be removed conveniently at operation. They limited the range of motion in the elbow joint both in flexion and extension, the extreme limits of flexion and extension being painful. A limited motion elbow brace was fitted which prevented these undesirable extremes of motion, and pain subsided enough to result in a serviceable arm with very useful range of motion.

8. A middle-aged man, in average good health, fractured both bones of his lower leg, and the tibia united so slowly by fibrous union that an operation was done to refresh the surfaces of the poorly united fragments. There was a very feeble attempt at callus formation after the operation for several months until a steel and leather support was made for the leg, which also allowed limited motion only at the ankle. He was given more confidence by the brace to use the leg cautiously in weight-bearing, and the increased stimulus of the latter was sufficient to produce solid union in the poorly united fracture after surgery had delayed recovery at the first attempt.

THE PRODUCT OF A UROLOGICAL CLINIC.

BY WILLIAM C. QUINBY, M.D., BOSTON.

(Continued from page 476.)

STRICTURE OF URETER.

Woman, No. 6642, aged 32, married, 24-iv-17. Complaint: Attacks of pain in left lower abdomen since pelvic operation eleven years ago. Chronic pelvic adhesions. Question of stricture of ureter. Retroversion. X-ray showed possible enlargement of left kidney and dilatation of ureter. No operation. Patient discharged seven days after admission. Reëntry: No. 7643, 5-xi-17. Pain has not been relieved by passage of ureteral bougies and vaginal tampons. At operation an intraligamentous ovarian cyst was removed. Many pelvic adhesions found. Impossible to identify ovaries or tubes. The uterus was not suspended. No complications. Patient was discharged seventeen days after operation. Reëntry: No. 8453, 1-iv-18. Diagnosis same as previous entries. Pain has not been relieved. Separation of pelvic adhesions. Partial salpingectomy and oöphorectomy. Ventral suspension of the uterus for retroversion. Long, hard, severe operation through dense adhesions. No complications. Patient was discharged on the seventeenth day after operation. 17-x-18. Urine sparkling and slightly alkaline. Uterus in good position. Cystoscopic examination showed marked trigonitis and slight hemorrhagic stippling about the ureteric orifices. Bladder not completely filled so shape was not determined. Patient complained of pains in left quadrant radiating down outer side of leg, and also of pain at end of micturition. ℞ hyocyamus mixture. 7-viii-19. Slight recurrence of same symptoms. Urine clear and free from pus. General health excellent.

The diagnosis of stricture of the ureter in this case was never entirely clear. The difficulties sometimes encountered long after severe pelvic inflammatory disease in woman are well illustrated.

TUBERCULOSIS OF THE KIDNEY.

1. Man, No. 5161, aged 25, single, 30-vii-16. Tuberculosis of kidney. Latent pulmonary tuberculosis. Left nephrectomy. Ureter much thickened. Proximal end transplanted beneath skin. Wound drained with iodoform gauze wick. Patient discharged nineteen days after operation. Reëntry: 25-x-16. Has had persisting sinus in flank. Remaining portion of ureter excised. Excellent convalescence. No further data.

2. Man, No. 5404, aged 29, married, 14-ix-16. Tuberculosis of kidney. Latent pulmonary tuberculosis. Right nephrectomy. No drainage. No complications. Patient died several months later, presumably of pulmonary disease.

3. Woman, No. 5873, aged 22, single, 9-xii-16. Preoperative diagnosis: Pyonephrosis. Postoperative diagnosis: Tuberculosis of kidney. Right nephrectomy. Kidney very adherent. Thickened ureter sewed under skin at lower angle of wound, which was drained. No complications. Wound healed on twentieth day. Reëntry: 20-ii-17. Tuberculosis of bladder with pain in region of remaining kidney. Investigation of kidney showed normal function with no evidence of tuberculosis. 18-xi-18. Has continued to visit Out-Door Department for treatment of bladder. Cystoscopy shows old puckered scar near region of right ureteric orifice. Bladder capacity somewhat diminished. Still has nocturia from three to five times. Is in excellent general health and has gained much weight. 26-iv-19. Patient has been working for the past two months. Feels very well. She urinates four to five times daily, and once to twice at night. She has gained ten pounds. Urine has a very slight haze. 21-viii-19. Patient has worked steadily and weighs 146 pounds. Says that she feels well. Urine is clear. Bladder holds 225 cc. without pain.

4. Woman, No. 6071, aged 26, married, 12-i-17. Tuberculosis of kidney and bladder. Severe infection with ulcerations prevented catheterization of either ureter. Exploration of left kidney. Double ureter discovered. Nephrectomy prevented because presence of right kidney not yet proved. Nephrectomy. Ureters unite into single tube at bifurcation of iliac artery. Ligated below this point. No complications. Discharged thirty-five days after first operation; fifteen days after second. Bladder only moderately relieved. Result: 27-v-18. Though under constant treatment in Out-Door Department, has not done at all well in regard to the bladder condition. It will hold only 25 cc. and on cystoscopy is seen to be almost entirely denuded of mucosa. Nocturia twenty times. 29-xi-18. Though patient's general condition is excellent and she has gained much weight, the bladder has continued to be markedly intolerant and of small capacity.

5. Woman, No. 6402, aged 33, single, 9-iii-17. Tuberculosis of kidney and bladder. General condition poor. Nephrectomy. Ureter found badly diseased. Cut off as far down as could be reached and end left under skin. Complications: Urine drained through wound in flank by reflux from bladder. Severe evening pyrexia. In hospital seventy-five days. Result: 5-vi-18. Is feeling pretty well; appetite is good and has gained weight. Side is almost healed and now gives but little trouble.

6. Woman, No. 6423, aged 39, married, 14-iii-17. Complaint: Pain in the right side. Tuberculosis of kidney and bladder. Low total renal function. Right nephrectomy. Wound not drained. Ureter much thickened. Pig inoculated from other side also shows tuberculosis. No complications. Discharged on eighteenth day after operation. Reëntry: 22-v-17. Day after leaving hospital had a chill and pain in left chest. An abscess in wound was found and evacuated. Patient slowly going down hill. One month later showed marked acidosis. No phthalein output. Blood urea nitrogen = 112.4 milligrams. Discharged against advice in very critical condition, forty-seven days after entrance.

7. Woman, No. 6644, aged 40, single, 23-iv-17. Marked Pott's disease. Tuberculosis of kidneys and bladder. Very frequent painful urination. Condition too poor to justify operation. Result: Probably dead.

8. Woman, No. 6810, aged 44, widow, 31-v-17. Tuberculosis of kidney and bladder. Previous nephrectomy at Boston City Hospital. X-ray shows stone complicating process. Condition too poor to warrant operation. Treat cystitis. Result: Probably dead.

9. Man, No. 7553, aged 44, married, 19-x-17. Tuberculosis of kidney and bladder. Nephrectomy. Ureter dropped back. Wound not drained. Discharged healed on fourteenth day. Result: 25-v-18. Has gained weight and is doing very well indeed, though has some frequency. Has had no treatment of bladder. 30-xii-18. Still has some frequency, and urine occasionally contains sediment. Patient feels that his condition is not poor enough to submit to a course of treatment of bladder.

10. Woman, No. 7671, aged 42, married, 9-xi-17. Tuberculosis of kidney. Nephrectomy. Ureter much thickened and edematous. Kidney badly infected. Some soiling of wound which was drained. Discharged healed on the seventeenth day. Reëntry: 21-xii-17. Patient has a residual abscess in loin. Remaining ureter excised. xi-18. Has had a very slowly

healing wound. Has been given a course of tuberculin, and general health shows very marked improvement. 23-v-19. Wound is now closed for the first time since operation. Tuberculin continued at weekly intervals for three months longer.

Of the eight cases in this group for whom nephrectomy was done, two have died, one of pulmonary disease (Case 2), the other of renal insufficiency due to tuberculosis of the remaining kidney (Case 6). In two instances, the disease of the bladder prolonged recovery to a marked degree. The best treatment of the stump of the ureter is a matter about which there is still lack of agreement among surgeons. At present it seems inevitable that a fair percentage of the cases should show a residual abscess regardless of the manner of treating the ureter. It is probable that such abscesses are often due to infection of the perirenal tissues before operation has been attempted. But this is a point which needs investigation.

HYPERNEPHROMA.

1. Man, No. 5137, aged 56, single, 27-vii-16. Hematuria with retention. Impassable stricture of urethra Tumor of right kidney. Operation 1. 28-vii-16. Suprapubic cystotomy for drainage of bladder. Operation 2. 2-viii-16. Nephrectomy for hypernephroma. Tumor had penetrated peritoneal cavity. Operation 3. 12-ix-16. Exploratory laparotomy for fistula of small bowel. Opening found in duodenum; impossible to suture. Operation 4. 15-ix-16. Excision of pylorus and gastroenterostomy. Death next day. Autopsy: Showed hypernephroma of right kidney; surgical wound for recent operation for removal of right kidney; extension of tumor into surrounding tissues; perforation of duodenum with drainage of duodenal contents through operative wound; extensive infection of wound.

2. Woman, No. 6857, aged 36, married, 9-vi-17. Mass in left side. Nephrectomy for hypernephroma. No evidence of penetration of tumor to capsule. No complications. Result: vi-18. Abdomen entirely normal on examination. Urine normal. Patient is thin and tired because of household duties. 25-xi-19. Husband reports that patient is very well and has gained ten pounds.

3. Woman, No. 6930, aged 57, married, 25-vi-17. Pain in left side of abdomen. Nephrectomy for hypernephroma. Complications: Much discharge from large drained wound with slight fever. Result: 1-vii-18. Condition is much improved. Occasional slight pain in region of operation. Bulge of muscles from interference with nerve supply. The urine is normal.

4. Man, No. 6996, aged 62, married, 6-vii-17. Smarting pain in the back near scapula. Slight fever. No urinary disturbance. Nephrectomy for hypernephroma. Perirenal fat infiltrated at upper pole. Steady decline and death in three weeks. Autopsy: Showed multiple hypernephroma metastases, and terminal bronchopneumonia.

VESICAL CALCULUS.

1. Man, No. 6016, aged 77, 4-i-17. Hypertrophy of prostate. Stone in bladder. Severe cystitis. Perineal prostatectomy. Pultaceous stone formation in base of bladder removed by gall bladder scoop. Complications: Severe cystitis with ammoniacal urine. Patient discharged twenty-nine days after operation. Reëntry: 5-iv-17. Recurrence of stones in the bladder. Persisting cystitis. Suprapubic cystotomy for stones. No complications. Patient discharged eighteen days after operation. Reëntry: 3-i-18. Still has very marked cystitis, causing much pain and great frequency of urination. This has been constantly treated, but the infection has not been much reduced. Cystoscope shows the difficulty to be due to diverticula. Suprapubic cystotomy and excision of diverticula. Inversion of pouches, followed by excision and suture. Bladder drained by suprapubic tube for one month, during which it was frequently washed out with antiseptics. No complications. Patient discharged twenty-two days after operation. Result: 1-iii-18. Patient has been much benefited by last operation. Since closure of suprapubic wound urination has been at normal intervals and painless. Decrease of pus in urine. General condition improved. 17-vii-18. Patient much better. Urinates without pain. Necessary to wash out bladder only once a week. 11-iv-19. Is again having frequency every two hours, day and night. About 60 cc. residuum of turbid urine. Bladder irrigation with silver nitrate and instillation of argyrol. Reëntry: 1-ix-19. Cystoscope shows that another stone has formed. Suprapubic cystotomy with removal of vesical calculus. No complications. Patient discharged after nineteen days. On the 8-xi-19 reports he feels fine.

2. Man, No. 6503, aged 55, married, 29-iii-17. Stone in bladder; cystitis. Suprapubic cystotomy for stone. Contraction of bladder neck forcibly dilated. Complications: Slight infection at one end of incision. No pus or fever. Patient discharged twenty-three days after operation. Result: 17-vii-18. Patient reports, saying that he feels fine and is working daily. Has no symptoms. Urine is clear with a few shreds.

3. Man, No. 6564, aged 74, 11-vi-17. Hyper-

trophy of prostate. Stone in bladder. Angina pectoris. Suprapubic cystotomy. Removal of stone. The stone was partially impacted in post-trigonal pouch. Sinus healed on seventeenth day. It was not deemed wise to attack the prostate on account of patient's precarious cardiac condition. Complications: Occasional twinge of anginoid character. Patient was discharged on the nineteenth day after operation. Result: 17-vii-18. Since leaving the hospital the patient's career has been stormy. He fell and broke his hip; burned himself with hot water bag; had severe hemorrhage from a subsequent gastric ulcer, and had to be transfused. Bladder has behaved only fairly well, and during last month patient complained of much nocturnal frequency and pain for which I injected 10% argyrol three times at weekly intervals, with considerable relief. viii-19. Condition remains about the same.

4. Man, No. 6907, aged 78, 20-vi-17. Stone in bladder. Cystitis. Prostatic enlargement. Suprapubic cystotomy for stone. Patient was a physician and objected strongly to having a prostatectomy. Complications: Slow healing of suprapubic sinus due to obstruction at bladder neck. One stitch abscess. Patient discharged on twenty-ninth day after operation. Result· 10-xii-17. Not so much urgency or frequency. Urine still cloudy. ix-18. Has had a severe attack of herpes zoster. Except for the element of infection which necessitates frequent lavage of bladder, does not have many urinary difficulties.

5. Man, No. 7605, aged 52, 30-x-17. Stone in bladder. Possible communication between urethra and rectum. About twenty-five years before entrance had probable prostatic abscess which resulted in a rectourethral fistula. Suprapubic cystotomy. Stone was removed from chronic inflammatory pouch in prostatic region. Complications: Patient surgically normal but mentally confused for two weeks. Discharged on twenty-sixth day after operation. Result: 1-i-18. Satisfactory convalescence. Still some infection in the bladder and there is some frequency of urination, but no pain. He has gained markedly in weight and strength and is now working. Occasionally once a week or once in ten days there is a very slight amount of air passed by urethra, although on no occasion when catheterizing the bladder for lavage have I been able to demonstrate that it contains air. It seems, therefore, that a communication with the rectum does exist, although this must be very small, giving passage to occasional air into the urinary tract. However, according to patient, there is never any urine passed by rectum, although in the past this did occur. v-19. Patient is in excellent general health, though there is a marked chronic cystitis present. No longer passes air by urethra.

6. Woman, No. 6358, married, 3-iii-17. Pain over symphysis made worse by walking or jarring. Stone in bladder. Cystitis. Has had two children, the first by Caesarean section; the second by instrumental delivery with severe tears which were repaired at the time. Dilatation of sphincter and extraction of stone after crushing. Stone found attached to summit of bladder, doubtless having formed on a misplaced ligature at previous operation. Discharge on eighteenth day with considerable incontinence. Reëntry: 4-iv-17. Incontinence of urine. Two operations on bladder neck at which tissues were infolded and built up by suture in region of sphincter failed to control incontinence. Discharged after twenty-one days still incontinent. Reëntry: 8-vii-18. Incontinence of urine. Suprapubic cystotomy. Excision of wedge at bladder outlet followed by submucous suture of whole region. Dissection of urethra with suture of it after torsion through 180 degrees. Patient continent at discharge. Result: 11-xii-18. In many respects is much better. When at home can hold water about an hour and at night does not wet bed. When she goes out, however, she has still some incontinence.

Case 1 is an example of the marked tendency to the formation of stone shown by some chronically infected bladders. Undoubtedly the prostate should have been removed by the suprapubic route at the first operation. This would have permitted adequate treatment of the diverticula. At the fourth operation marked trabeculation made it quite unsafe to attempt removal of the stone by litholapaxy and necessitated opening the bladder once more.

It was an error of surgical judgment to dilate the sphincter of the bladder in Case 6. The resulting incontinence has never been entirely remedied.

CYSTITIS.

1. Man, No. 5334, aged 52, married, 3-ix-16. Cystitis. No operation. The renal pelves and prostate were found normal. The floor of the bladder was infected and showed some ulceration. No cause for this was determined. Bladder antiseptics gave much improvement. Patient discharged one month after entrance. Result: 26-v-19. Patient reports in person and states that he has had inflammatory rheumatism and had his teeth extracted. He now has a pain which shoots up his spine. He has occasional burning on urination, but frequency has not increased, and urine is clear, with no shreds. Movements of lumbar spine are limited. Lumbar lordosis decreased. Prostate normal in size and consistency.

2. Man. No. 5973, aged 35, single, 27-xii-16. Old fracture second lumbar vertebra. Reten-

tion of urine. Cystitis. No operation; cystitis treated locally. Patient discharged after twenty-six days in hospital. Result: 2-vii-18. Has made steady improvement. Still has slight difficulty with control of sphincter, and some cystitis.

3. Woman, No. 6535, aged 57, single, 2-iv-17. Chronic cystitis. Patient was treated by lavage, and discharged after twenty-one days. Result: 9-vii-18. Patient is no better. Cystoscope shows rather negative bladder picture except for heaping up of mucosa on left side of base. Bladder capacity is markedly decreased. 15-v-19. Patient has frequency in spite of fact that urine is nearly sterile. Has had much trouble during winter, and recently has had infected antrum drained.

4. Woman, No. 7624, aged 75, 2-xi-17. Acute cystitis and atony of bladder. Before entrance to hospital had had a slight stroke but no marked paralysis. Marked gradual improvement of bladder by instillation of 10% argyrol. Result: 22-vii-18. Patient reports by letter that she has not needed medical care since leaving hospital. Her legs are getting strong and she has no difficulty on urination.

5. Woman, No. 7255, aged 13, single, 21 viii-17. Cystitis. Cystoscopy showed probable pyelitis. Patient improved under local treatment of bladder, and was discharged after seven days. Result: 1-17. Patient in good health. 23-x-19. Friend reports by letter that patient has since been operated on twice for "tumor of bladder," without relief. She tried seventeen treatments of osteopathy with alleged cure.

6. Man No. 5347, aged 78, married, 6-ix-17. Cystitis. Hypertrophied trigone. Paralysis agitans. Shadow in x-ray plate led to exploration of kidney, but no stone was present. For marked dysuria suprapubic cystotomy was done followed by incision of trigone. The prostate was not enlarged though bladder showed marked trabeculation. No complications except those of cystitis. Patient discharged on fifty-fifth day. Result: 13-v-18. Patient doing fairly well. Bladder still shows 150-175 cc. turbid residual. By weekly lavage of bladder he keeps comfortable. Tremor of body and extremities is slowly increasing. 4-xii-19. Patient has been having bladder irrigated with $AgNo_3$ once weekly.

The results of treatment in this class of case is often unsatisfactory because infection of the bladder is a secondary affair in the vast majority of instances. The diagnosis of cystitis is, therefore, an admission of inability on the part of the examining surgeon to find the primary cause. In some instances it is probable that this no longer exists at the time of examination. In cases such as Nos. 2, 4, and 6, the cystitis is due to the involvement of the bladder by disease of the central nervous system. Its complete cure in such instances can hardly be expected.

DIVERTICULUM.

1. Man, No. 7034, aged 54, 14-vii-17. Prostatic obstruction; diverticulum; stone in bladder, cystitis. Suprapubic prostatectomy: removal of stone; inversion of diverticulum. Complications: Epididymitis on third day. Bladder healed on twenty-second day. Patient was discharged on twenty-seventh day after operation. Result: 20-vii-18. Patient is free from symptoms. Urine contains a few shreds. Considers himself much improved by operation.

2. Man, No. 7210, aged 58, married, 14-viii-17. Prostatic obstruction (median bar). Diverticulum. Suprapubic cystotomy. Transversical partial prostatectomy with excision of diverticulum. Primary drainage of bladder for huge residual, 1800 cc. Diverticulum on right as large as bladder itself. Ureter not involved. No complications. Complete healing on twenty-first day after operation. Patient discharged one month after entrance. Result: vi-18. Patient well except for slight frequency and a little pus in urine. 29-xi-18. Patient well and urine clear. 30-iii-19. Patient well and without symptoms.

3. Man, No. 5128, aged 60, single, 25-vii-16. Severe cystitis from diverticulum of bladder. Symptoms present for about twenty years. Prostate normal. Kidneys show somewhat diminished function and slight infection. Excision of diverticulum. Ureter not involved. Complications: Auricular tachycardia and local sepsis complicated convalescence. Temperature was not normal until after the fortieth day. Patient was discharged on the seventy-third day. Reëntry: 23-iii-17. Ventral hernia due to operation. Repaired without complications. Was discharged on fifteenth day. 9-i-19. Patient is doing very well. There is still a slight soreness about wound for which he wears a support. The bladder still shows a chronic infection but he is free from symptoms.

FOREIGN BODY IN BLADDER.

Man, No. 6703, aged 65, single, 8-v-17. Suprapubic prostatectomy before entrance to this hospital. Cystoscopy showed a foreign body in bladder, and a severe cystitis. Suprapubic cystotomy with removal of foreign body which was a piece of catheter. Operation was complicated by contracted bladder and scar of previous operation. Bladder intensely infected. Complications: Slow closure of wound because of local infection. Temperature normal after fourth day. Patient discharged on the twenty-fourth day after operation with excellent functional result. Result: 24-vii-18. General health excellent although patient is still slightly incontinent. Urine slightly turbid. 18-x-18. Patient is doing well and has no complaints.

INCONTINENCE OF URINE.

Woman, No. 6696, aged 50, single, 7-v-17. Relaxed sphincter of bladder. Plastic operation at neck of bladder. No complications. Patient was discharged twelve days after operation. Discharge note: 24-v-17. The patient left the hospital today in good condition. She is having no difficulty with micturiton. Vaginal examination shows perineal floor of good strength. No cystocele, or rectocele. Patient has been up and around the ward for two to three days. Temperature, pulse, and respiration normal. No further data.

CANCER OF THE BLADDER.

1. Man, No. 6805, aged 41, 29-v-17. Cancer of the bladder. 1. Suprapubic cystotomy. 2. Transplantation of left ureter into intestine. Complications. Steady decline with death on the fourteenth day after second operation. Signs of peritonitis. Autopsy: Showed suture leaked from too much tension.

2. Man, No. 6850, aged 52, widower, 12-vi-17. Cancer of large intestine communicating with bladder. Condition determined both by cystoscope and proctoscope. No operation. Patient discharged after ten days. Reëntry: 26-vi-17 Formation of artificial anus. Hard mass occupying region at junction of sigmoid and rectum densely adherent to posterior wall of bladder. No evidence of constriction of bowel. Bowel was opened two days after operation. Complications: One attack of severe diarrhea from too active catharsis. Result: 7-viii-18. Patient reports that he has a small abscess at anal margin draining into rectum. It has emptied itself several times, giving spontaneous relief. ℞, Suppositories. Reëntry: 30-i-19. Until eleven days ago patient has been able to work. Since then has failed rapidly, and has had chills, fever, and vomiting. A large, cancerous abscess surrounding rectum was drained. Died 5-ii-19.

3. Man, No. 7326, aged 60, married, 5-ix-17. Carcinoma of the bladder. Obstructing prostate. Suprapubic cystotomy. Only a palliative operation was attempted. A hard, indurated, ulcerated mass on left side of bladder was found to involve the sphincter. Small median lobe enlargement. Patient was discharged twenty-fifth day after operation. Result: 8-x-17. Wound healed. Feels no better than before operation. 31-x-17. Has pain in back and left side. No further data.

4. Man, No. 7779, aged 47, married, 2-xii-17. Cancer of the bladder. Suprapubic cystotomy for exploration and permanent drainage. Removal impossible. Patient was discharged on the twenty-second day. Result: Patient died at home 19-xii-18. During the year following artificial opening in bladder patient has been quite free from pain in this region. Lately he has had much pain in back and has lost flesh rapidly, due to metastases.

PAPILLOMA OF BLADDER.

1. Man, No. 5356, aged 86, married, 7-ix-16. Papilloma of bladder. Fulguration. Patient's condition apparently normal. Sudden death during night of sixteenth day. No autopsy.

2. Man, No. 5606, aged 55, married, 19-x-16. Complaint: Pain in the side, and bloody urine. Papilloma of bladder. Stones in kidney with infection. Suprapubic cystotomy and cauterization of tumor. Nephrectomy. Dense adhesions were found around the kidney. Complications: Localized pleurisy for four days. Patient was discharged on the fiftieth day after operation. Results: 22-i-18. Patient feels quite well, although he complains of frequency and burning after micturition. 6-x-19. Has been well till three days ago, when he had slight hematuria. Cystoscope shows recurrence of papilloma; fulgurated. 26-xi-19. No further trouble. The tumor has been destroyed.

3. Woman, No. 5772, aged 60, 21-xi-16. Papilloma of bladder. Cystitis. Treated by fulguration. Patient was discharged to the Out-Door Department after twelve days, to continue treatment. Reëntry: 26-xii-16. Suprapubic cystotomy. Excision of papilloma. Fulguration failed to control growth, and the cystitis became very marked. Suprapubic wound did not heal until the twenty-sixth day on account of mild local infection. Had considerable difficulty with walking, gradually growing normal during the last ten days. Result: 22-vii-18. Letter from patient states that she has been free from hemorrhages and has been working for the past year. She is not as strong as formerly, but feels like a new woman, and although she gets tired easily her courage is good and she intends to live to a good old age.

4. Man, No. 5698, aged 51, 8-xi-16. Malignant papilloma of bladder. Severe cystitis. 1 Suprapubic cystotomy. Excision of tumor with cautery. 2. Resection of neck of bladder. At first operation a tumor was found just inside meatus on left side of trigone. Fistula did not heal; fever and slight local sepsis. The second operation was followed by normal convalescence. The patient was discharged on the forty-ninth day after the second operation, with bladder completely healed, but with total incontinence of urine. Result: The patient re-

mained at home after leaving hospital for about two months. Then he entered the Holy Ghost Hospital for one week. He was discharged from there and remained at home until he died 13-iv-17.

5. Man. No. 6694, aged 52, 5-v-17. Prostatic hypertrophy. Malignant papilloma of bladder. Perineal prostatectomy; excision of papilloma of bladder. Unsuspected tumor was found arising from the superior margin of internal meatus. Complications: Chill and vomiting on the third day with slight evidence of renal impairment Sinus healed on the twelfth day. The patient was discharged on the twenty-second day after operation. Reëntry: 19-vii-17. Acute epididymitis accompanied by a good deal of pain in the cord. Infection of bladder persists and is hard to control on account of great pain on passing catheter. Reëntry: 20-xi-17. Recurrent cancer of the bladder. Resection of neck of bladder. Operation the same as for total prostatectomy. Slow, hard convalescence with considerable pain coming in spasms in region of the neck of bladder. Patient was discharged on the twenty-eighth day after operation. Result: 15-iii-18. Patient has not got back his courage since last operation. He has been entirely unable to accommodate himself to a urinal, which is necessary during the day as well as night. Suprapubic palpation shows definite recurrence. He has adopted Christian Science. 17-vi-18. Patient died about a week ago, after a period of unconsciousness lasting for six days during which there was a diffuse purulent discharge from the nasopharynx. There was marked evidence of local recurrence of the growth as well as a foul cystitis.

6. Man, No. 6725, aged 56, married, 12-v-17. Malignant papilloma of bladder. Excision of papilloma. Cauterization. The tumor was cut off and the pedicle cauterized. Bladder was sponged out with alcohol. Complications: Fever for six days. Patient rather slow to gain strength. Discharged twenty-eight days after operation. Result: 17-i-18. No further trouble. Urine clear. Cystoscope shows no recurrence. 24-x-19. No trouble since discharge. No bleeding. Cystoscopy shows no recurrence. Slight cystitis still present causing no symptoms.

Such cases as these illustrate our present helplessness in the face of malignant disease of the bladder.

(To be continued.)

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Bequest to New England Hospital for Women and Children.—The sum of $20,000 was bequeathed to the New England Hospital for Women and Children in the will of the late Mr. George Augustus Goddard.

Book Reviews.

Anatomy of the Peripheral Nerves. By A. Melville Paterson, M.D., F.R.C.S. London: Henry Frowde, Oxford University Press; Hodder & Stoughton, Warwick Square, E. C. 1919.

A great deal of excellent material for the orthopedic student or surgeon is contained in this book. The author has briefly outlined his subject in four chapters and supplemented the text with sixty-four splendid illustrations. The main topics of discussion are: The Anatomy of the Peripheral Nerves; Distribution of the Spinal Nerves; The Sympathetic System and the Cranial Nerves. Because of the skill which has been required in war surgery in military hospitals, a more precise and accurate knowledge of the anatomy of the peripheral nerves is required from the orthopedist. As a reference book for the experienced man and as a textbook for students, this volume should prove especially helpful because it does not discuss the subject at too great length, but covers the ground systematically, clearly and concisely.

A Textbook of Pathology. Eleventh Edition. By Francis Delafield, M.D., LL.D., and T. Mitchell Prudden, M.D., LL.D. New York: William Wood & Co. 1919.

The eleventh edition of this well-known standard textbook of pathological anatomy is now ready for publication. The text has been largely rewritten and is illustrated by fifteen full-page plates and eight hundred and nine in black and colors. The subject matter is arranged in three parts: Part I deals with general pathology, and Part II deals with special pathology. Part III explains carefully the method of making post-mortem examinations and the methods of preserving and examining pathological tissues. Bearing in mind the fact that the book is to be used as a textbook and as a reference book by teacher and student as well, the material contained represents, "not matters still under active discussion, but those upon which a general agreement has been reached by the foremost investigators on the subject." For the student who wishes to consult further on the subjects discussed in these chapters, the references to many monographs will be found very helpful. In view of these recent revisions and additions to previous editions, the eleventh edition of this book should prove of increased usefulness.

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BOSTON MEDICAL AND SURGICAL JOURNAL
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LEGISLATION ON MEDICAL MATTERS.

THE report of the Joint Committee on Legislation published in last week's issue of the JOURNAL, is discouraging to those who hoped for progressive action on the part of the Legislature this year. It is discouraging to realize how little influence, except in a negative way, the medical profession exert through the Joint Committee. While no backward step has been taken, the record is one of complete failure to gain any step forward.

Public health today is recognized as a matter of greater importance and of greater popular concern than ever before. But knowledge on matters of public health is not yet sufficiently widespread to create the overwhelming public sentiment which will compel legislative action along definite lines. It is interesting to note that in general the Committee on Public Health of the Legislature is brought to favor measures advocated by the Joint Committee of the State Medical Societies. This happened in the cases of vaccination and of physical training in the schools, and in the choice between the bills proposed for maternity aid. It did not happen in the more strictly technical matter of premedical educational requirements, brought up this year for the first time.

The Legislators, before whom a medical matter can be fully presented, will in general follow the desires of the medical profession. The problem is to reach and influence, through a full knowledge of the truth, those members of the Legislature not on the Committee on Public Health or not particularly interested in matters of public health.

The antagonism of those who oppose legislation of a progressive character on medical subjects need not be feared. It is made up of many elements having nothing in common except opposition to medical progress, and a keen interest in seeing to it that their views reach every member of the Legislature. What the medical profession need to fear is their own lack of energy and initiative in bringing home to the public and through the public to the Legislature a full knowledge of the facts of medical science which are of public concern.

This cannot be done by a paid lobby. It cannot be done by any committee. It must be done by the work of every individual member of the medical profession. Public lectures, publicity agents, society resolutions, work by committees may stimulate and direct interest, but the work must be completed by the individual physician in his own community. As soon as each physician knows clearly enough to explain to the public just what vaccination has accomplished the Legislature will act.

The same thing is true of other matters. If as many doctors as lawyers could be members of the Legislature, action would follow, but from the nature of their work, physicians can rarely become legislators. Until medical matters assume a very much greater relative importance than they now have, it is idle to think of electing or defeating candidates for office because of their votes on medical questions. Elections will be determined by other considerations.

If we hope to influence legislation we must inform ourselves more fully and diffuse our views more widely. We must be sure that our Joint Committee is always wisely chosen and that its activities shall be constant and widespread rather than spasmodic and limited. The JOURNAL pledges itself to greater activity in the future in what aid it may render.

HISTORY OF THE STATE HEALTH DEPARTMENT OF MASSACHUSETTS.

In commemoration of the founding of the State Board of Health of Massachusetts fifty years ago, a special issue of *The Commonhealth* has been devoted chiefly to a brief summary of the work of the State Department of Health since its establishment in 1869 and of the State Department of Health to 1919. Twenty years after Lemuel Shattuck and his associates had made a report to the Legislature pointing out the need of a State Board of Health, the first health department in the country was founded in Massachusetts. It is interesting to observe how many of our ideas were embodied in the recommendations of the Shattuck committee: the establishment of a central board of health to have charge of the general execution of the health laws of the State, the establishment of local boards of health, a census of the people, systematic registration of births, marriages and deaths, investigations into the causation of disease, and public health education.

The State Board of Health of Massachusetts began its work in 1869 under a charter of the broadest possible scope, maintaining an independent existence for ten years. In 1879, three departments, those of health, lunacy, and charity, became organized as one board; but again in 1886, the Board of Health resumed its separate identity by an act of Legislature, to remain unchanged until 1914, when the Board became a department, with a Commissioner in charge, aided by an advisory Public Health Council.

The various activities of the State Department of Health have been described by those present in charge of its respective divisions. Among the first of the problems to be considered were those pertaining to water supply, drainage and sewage. Investigations and reports were made of the disposition of the sewage of towns and cities, of the sanitary effects of draining it into the waters of the Commonwealth, and of the joint use of the water courses for sewers and as sources of supply for domestic use. The Board employed engineers and chemists to assist in this work. In 1884, the Massachusetts Drainage Commission was organized to consider various questions of water supply, drainage, and sewage; this commission made a number of recommendations which were enacted into legislation in 1886 and placed in the hands of the new Board of Health created in that year. A permanent engineering organization was created, supplemented with chemical laboratories. In 1885, there were established at the Massachusetts Institute of Technology laboratories for the examination of water and sewage, and in 1887, an experiment station was established at Lawrence for investigations in regard to the purification of sewage, trades waste, the treatment and filtration of water, and other subjects of similar nature. The Institute laboratories were removed to the State House in 1896.

The duties now performed by the Division of Communicable Diseases were largely cared for, prior to the reorganization in 1914, by the secretary of the Board, with the assistance of the State Inspectors of Health. These inspectors, at first sixteen in number, were appointed in 1907, and devoted only part of their time to the public health work. Their duties varied widely, from the inspection of factories, now delegated to the State Board of Labor and Industries, to the ever-changing problems of the local Board of Health. In 1912, the districts of the State were changed, and the number of officers reduced to twelve. In 1914, a further change in districts and reduction of men to eight was made. The men were placed upon a full-time basis, and are required by statute to devote all their time to public health work. When the plan of reorganization was effected, a separate division was created, to be known as the Communicable Disease Division, charged with the specific function of reducing the incidence of communicable disease. Efforts have been directed persistently against tuberculosis, typhoid, pneumonia, diphtheria, venereal disease, measles, scarlet fever, and whooping cough.

The organization of the Division of Communicable Diseases consists of a director, epidemiologist and clerical force, a subdivision of venereal diseases with a chief and staff, a diagnostic laboratory, and a field force of eight District Health Officers and eight nursing assistants. In addition to his supervision of reportable diseases the epidemiologist also conducts special investigations of scientific nature. The policy of aiding local authorities in their investigation of local undue prevalence of reportable diseases has proved of great service and value. Surveys of cities and towns are made upon request or if need arises. The activities of the District Health Officers, assisted by local boards of health, are reducing to a minimum the possibility of extensive undetected outbreaks of disease. In the care of venereal diseases, the division not only provides for the diagnosis of gonorrhea and syphilis, but also, through the distribution of arsphenamine and the operation of subsidized clinics, offers free treatment to the people. Educational work has been conducted by means of lectures, motion pictures, slides, and pamphlets; and physicians, dentists, druggists, and manufacturing concerns have coöperated in promoting measures for the prevention of venereal disease. By means of the diagnostic laboratory, examinations of the highest scientific value are made, and real preventives are offered against communicable disease, typhoid, paratyphoid, diphtheria, and smallpox.

The work of the Division of Food and Drugs began with the passage of the first food and drug law in Massachusetts in 1882. Two analysts were appointed to collect and examine samples of food and drugs. There have been appointed additional analysts since that time and appropriations for the work have been increased each year. After the reorganization of the State Board of Health, the Food and Drug Division was created and the Food and Drug Laboratory, the Food and Drug Inspectors and the Department of Dairy, Cold Storage and Slaughtering Inspection were consolidated. About ten thousand samples, a large part of them milk, are examined annually; about three hundred cases are prosecuted each year. Of recent years the number of prosecutions for the sale of decomposed foodstuffs has increased, not because of any increased sale of decomposed food, but because the research work done by the Department and others has resulted in greater accuracy in detecting by chemical methods such decomposed material. In 1916, this division undertook an investigation to manufacture salvarsan, a drug which was practically exhausted in this country by the war; a small factory has been established and there have been eighteen thousand doses of this article, named arsphenamine, made by the division and distributed by the Department.

The activities of the Division of Biologic Laboratories were begun in 1894 by the establishment by Dr. H. P. Walcott of a laboratory for the production and free distribution of diphtheria antitoxin. Dr. J. L. Goodale started the preparation of antitoxic serum in a laboratory in the State House and some serum was distributed in the spring of 1895. At that time a number of laboratory rooms were equipped at the Bussey Institution and the work was carried on by Dr. Theobald Smith. With the increasing demand for serum, the Legislature, in 1903, passed a bill authorizing the State Board of Health to procure and distribute vaccine lymph. A new building for the preparation of diphtheria antitoxin and vaccine virus was completed in 1904 by the corporation of Harvard University on a portion of the land of the Bussey Institution. In 1914, the Antitoxin and Vaccine Laboratory was made a part of the Division of Biologic Laboratories, with Dr. M. J. Rosenau as director of the division. The division includes also the Wassermann Laboratory, which was established in Boston in June, 1915. From June 1, 1915, to August 1, 1919, it tested 108,798 specimens by the Wassermann reaction; the work has increased from the rate of thirteen thousand specimens per year during the first six months to over thirty thousand specimens per year at the present time. The Laboratory has taken over also the diagnostic work for the Department of Animal Industry and has tested over four thousand specimens, chiefly for rabies and glanders. The Laboratory has conducted also experimental studies of the complement fixation test for tuberculosis and of the gonococcus test. A standardized method of performing the Wassermann reaction has been established by the Laboratory and adopted by most of the large laboratories throughout the State. The Division of Biologic Laboratories concerns itself with the diagnosis, treatment, and suppression of some of the most important communicable diseases, such as diphtheria, syphilis, gonorrhea, tuberculosis, pneumonia, and meningitis.

The Division of Hygiene was organized within the Department of Health in the spring of 1915, primarily for the purpose of reducing infant mortality and promoting child hygiene. The work has been carried out with gratifying results. A public health nurse was appointed as a health instructor to travel throughout the State, arranging health weeks and stimulating interest in the local communities on the subject of child conservation. Other nurses were appointed as the work increased, and a child welfare exhibit was arranged to display various phases of child hygiene. During the past year there were employed, temporarily, at the time of fairs, at which the child welfare exhibit was displayed, a physician skilled in pediatrics to weigh, measure, and examine children, and two dental hygienists to advise parents and children in matters of dental hygiene. Mothers have been assisted further by a series of prenatal and postnatal letters setting forth some of the most essential facts about child conservation. In coöperation with the State Board of Education, the subject of child welfare was outlined both for teachers in vocational schools and for young women and mothers. During the war, a child conservation committee was formed, including pediatricians and obstetricians, a nurse, and others representing special phases of child conservation work. A group of eight nurses was employed by this committee to undertake the survey of different cities and towns for the purpose of determining what facilities existed for the conservation of child life. Through the Women's Council of National Defense and the help of local committees, a child weighing and measuring campaign was conducted in Massachusetts; this campaign gave publicity to child welfare problems, and aroused among parents a greater and more intelligent interest in the health of their children.

The present organization of the Division of Hygiene consists of a Director, with a clerical force, a subdivision of public health nursing, including a chief and four nurse health instructors, a health instructor on foods, a supervisor of mouth hygiene, and a health instructor in charge of exhibits in the field and of drafting. Its chief function is educational, and its major activity, child conservation. The next step which seems necessary in the future development of child welfare activities is the formation of advisory clinics for children to which parents can bring apparently healthy children for examination and advice; these clinics are needed particularly in the rural parts of the State. Another step of vital importance is the extension of public health nursing to every community in the State. Through the formation of health centers throughout Massachusetts, people may learn how to keep well by means of the examinations, instruction and advice which it is the purpose of the Division to make available to everyone in the State.

The development of the State Health Department of Massachusetts during the past fifty years has gone far in the attainment of the ends outlined by its founders; its new departures and increasing activities set for the future ideals which will promote still further the conditions of health for which we are striving in Massachusetts.

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THE PHILIPPINE HEALTH SERVICE.

WE have just received the Report of the Philippine Health Service for the year ending December 31, 1918. The year was a particularly disastrous one from the standpoint of epidemiology: never in its history, excepting, perhaps, during the years of the cholera epidemics in 1902 and 1903, have the resources of the Health Service been taxed so heavily. For this reason, although all the usual activities of the work were carried on throughout the year, few permanent sanitary improvements could be effected. Influenza and smallpox proved to be the most serious of the epidemiological problems during the year. From influenza alone there occurred about 85,000 deaths. The disease appeared first in a mild form, with a low mortality; but the second epidemic wave which swept over the whole Archipelago from Aparii to Sulu from the latter part of September to the end of the year caused a mortality of about 1.8 per cent. Most of the deaths were due to respiratory, cardiac, and renal complications.

Smallpox was present during the year in epidemic form. It is significant to note that while smallpox was reported during 1916 and 1917 from the provinces of Samar and Leyte and from Davao, Mindanao, the city of Manila and the rest of the provinces have enjoyed immunity from smallpox since the general vaccination of 1905 and 1906. The recent increase in cases of varioloid indicates that the immunity conferred to the population by the previous general vaccination has begun to wane. A striking feature of the outbreak was the preponderance of children among those attacked. In Manila, 72 per cent. of the patients were under 15 years of age and 85.9 per cent. were in children of from fifteen days old to and including ten years of age, the remaining 14.6 per cent. including all ages from 11 years up. Approximately the same percentages for age groups obtained in the provinces. The smallpox situation, while grave, was never out of control. Emergency hospitals were established where needed, as rapidly as possible, and they served to reduce the mortality and to retard the spread of the disease. Vaccination was pushed vigorously by all agencies concerned—insular, provincial, and municipal.

Among other communicable diseases, cholera was one of the most insidious. It was present throughout the year in sporadic and epidemic form in Manila and in thirty-one provinces, having a total of 8,983 cases and 6,340 deaths. The cholera problem in the Philippines bears many points of resemblance with the typhoid problem in the United States, in that in either country, either disease has become endemic and has never been eradicated, although always held in check. The typhoid outbreaks in America are of the same general characteristics as those of cholera outbreaks in the Islands, from the standpoint of epidemiology. The total eradication of cholera from the Philippines is a possibility for the future, but at the present time the most that can be hoped for is the control of outbreaks of the disease and the reduction to a minimum of infection incidence.

There were registered from the provinces 3,817 deaths from typhoid fever, compared with 2,144 during 1917. The incidence rate increased 79.46 per cent. in 1918 over that of the preceding year. The record in the city of Manila, however, was better, due probably to more thorough and accurate reporting of cases and a consequent improvement in home isolation and hospitalization, in the prevention of contact infection, and in precautions taken in regard to food and milk. In the case of dysentery, also, the total number of deaths reported from the provinces showed an increase, while the number decreased in the city of Manila. Forty-five cases of diphtheria and fifteen deaths in Manila were found positive from a clinical standpoint. Two epidemiological points in connection with this outbreak remain as yet unsolved: (1) The high mortality obtaining both in positive and negative cases, even with the administration of curative doses of diphtheria antitoxin, and (2) the participation of other non-specific factors in the causation of the disease. Tuberculosis seems to be increasing every year. During 1918 there were more deaths from this cause than from cholera, dysentery, and typhoid combined. An increase of 14 per cent. over 1917 was recorded for 1918. Malaria also causes, yearly, an increasing number of deaths. There was not registered a single case of either human or rat plague during 1918 anywhere in the Philippines.

At the close of 1918, seventeen hospitals were in operation under the control of the Health Service; two of these are located at Manila. At the Bilibid prison, the chief causes of mortality among the prisoners were pulmonary tuberculosis, intestinal parasites, amoebiasis, venereal diseases among the new arrivals, contagious eye diseases, grippe, and respiratory diseases. The San Lazaro Hospital, the only institution in the islands devoted exclusively to the care, isolation, and treatment of dangerous communicable diseases, admitted 4,803 patients during the year; of these, 401 were cholera patients, 1,079 smallpox, 860 varioloid, 460 measles, 650 tuberculosis, 302 leprosy, 326 insanity, 169 dysentery, and 162 mumps. Of those brought to the hospital for treatment, 1,180 died, nearly one-half from smallpox. A new general hospital and a new contagious hospital were opened in Zamboanga. One hundred and sixty-five new dispensaries were established, making a total of 562 in operation at the close of the year, serving over 380,000 people. At the Culion Leper Colony a number of permanent improvements were effected during the year: the construction of a Protestant chapel, the completion of the Culion Leper Clubhouse and the new leper schoolhouse, the construction of the sanitary barrio and of a medicated bath house, and the completion of the new Imhoff tank.

In the department of public health nursing, the work in Manila has been in the main along educational lines and in connection with child welfare, medical relief, and general hygiene and sanitation. Public health nurses attended to 224 abortion cases, 2,845 normal deliveries, 157 dystocias, and 732 post partum cases, supervised the feeding of 5,767 babies under two years of age, and gave 1,158 public and 9,289 private lectures.

Education and publicity have been promoted by a bi-weekly bulletin distributed to all parts of the Islands, and printed in the daily papers. Pamphlets and exhibitions, moving pictures, and lectures attended by 267,644 persons, helped to improve sanitary and hygienic conditions. The organization of 167 women's clubs, making a total of 233, has proved to be one of the most effective measures yet evolved in reducing infant mortality, correcting prevalent dietary errors, improving domestic hygiene, and in improving generally the family, social, and economic standards. School inspection has been developed to the utmost latitude compatible with present appropriations. A total number of 1418 schools were inspected and 186,233 pupils were examined. The greatest interest and advancement in sanitary work has been noticeable among the non-Christian people. The Pacific coast of Mindanao has been given, for the first time in history, the benefits of a health organization.

In the Extra Cantonment Zone, sanitary work was carried on in and around Camp Claudio in order to safeguard the lives of the officers and men of the Philippine National Guard Division held in training from dangerous communicable diseases, such as cholera, typhoid, and smallpox.

A particularly interesting experiment tried by the Health Service in 1918 was the system of health organization designated the automatic health organization. This system consists, in a series of maps, curves and charts. card indexes and cross indexes, based upon data which have been obtained through the work of the Sanitary Commissions, and which will be installed in each sanitary division as rapidly as may be possible. Once this type of organization is established, it will be possible for the health officer to know at once what particular factor is bringing about an increase in morbidity and mortality and it will indicate with a reasonable degree of exactness the probable origin of the infection which is producing the morbidity and mortality. A little further and more detailed investigation will then enable the health officer to locate the cause with certainty. The system has been actually tried during the year in the provinces of Cebu and Bulacan. The results have far surpassed expectations as to the practical benefits to be derived from the system, and it is planned to extend it to every province beginning January 1, 1920.

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The annual meeting of the Massachusetts Medical Society will be held at the Boston Medical Library on June 8 and 9, 1920

PROPOSED READJUSTMENT OF OUR INSANITY LAWS.

The recent tragic assassination of Dr. James Wright Markoe has reminded us once more of our faulty insanity laws. For years there has been advocated a readjustment of our insanity laws, not only for the welfare of patients, but also for the protection of society in general. The Brooklyn Neurological Society has called to our attention the urgent necessity of a combined nation-wide appeal for an investigation of the laws as they exist at present. It should be remembered that insanity is essentially a medical and not a legal problem. Under the present laws it is for the judge or jury to determine whether or not a man is insane, and safe or unsafe to be at large. Neither by education nor by training are members of the legal profession competent to decide upon these matters; this fact the majority of judges realize and prefer to abide by the opinions of psychiatrists.

Some of the most dangerous types of insanity, particularly paranoid conditions without deterioration, are the most difficult ones to diagnose. Not infrequently such cases are merely asked by the court whether or not they are insane, and upon a reply to the negative are discharged and are cast back, potential homicides, upon society. The medical profession is helpless to remedy these conditions, as the law grants to the judge or jury, and not to the physicians, the power of deciding such cases. If the present laws and legal procedure are not to remain unchanged, all physicians, individually and collectively, must interest themselves, the press, and the public. In a medical problem of this sort, indifference on the part of the medical profession is both detrimental to patients and dangerous for society.

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MEDICAL NOTES.

The American Hospital for Women and Children in Madura, India.—The American Hospital for Women and Children in Madura, India, has been installed in the new buildings made possible by the gifts of American women in the Atlantic States through the Woman's Board of Missions. The hospital was dedicated on February 16. At the dedication ceremonies Mrs. B. Rama Rao, a Christian Indian woman, wife of a government official, voiced the love and gratitude of the women of India for this generous gift from America. British officials took part in the exercises, for the British Government gave a grant amounting to about one-fourth of the total cost of the hospital, which was 200,000 rupees, or about $100,000 at the present rate of exchange. Gifts of silver were given by prominent Hindus for the endowment of a special ward for their caste.

In the center of Madura is one of its most famous buildings, the temple of the Goddess Menarchee. This temple is conspicuous for darkness, uncleaniless, superstition, misery, and evil. The new hospital building stands not far from it, and its gleaming white walls are symbols of light, cleanliness, scientific knowledge, relief from pain, and spiritual ministry. The main building is similar in shape to the letter E and is made up of three connecting blocks devoted to medical, surgical, and maternity wards. It has high-arched, spacious windows, and wide verandas. A smaller, two-story building serves as a dispensary, and administered last year about 51,000 treatments. Other buildings included in the hospital plant are an isolation ward, a hostel for patients' friends, a morgue, a laundry, kitchens, and quarters for nurses and servants. The American doctor in charge is Dr. Harriet E. Parker, a native of Vermont, who has for twenty-five years given her skill and her love to the women and children of India. Associated with her is an American missionary nurse, Miss Mary Rogers of Medford, Massachusetts, and a staff of Indian nurses and compounders.

In a region about half as large as New England, there is no other mission hospital for women and children in Southern India, but these are staffed by male doctors, many of whom are Indians. Owing to the seclusion of women and the prejudices and customs of the land only the very poorest women or those in the immediate vicinity will go to such a hospital. Dr. Parker needs associates to help in the administration of this new hospital. American women doctors and surgeons who could minister to scores at home could in India serve millions of people.

Post-Graduate Aid to Country Physicians.—It has been announced by the Endowment Fund Committee of the New York Graduate Hospital that the $100,000 contributed by Mrs. Henry R. Rea in memory of her parents will be used to establish twenty scholarships for the benefit of country physicians who are unable to pay their own way through the advanced courses of instruction. Mrs. Rea's gift was made toward the $2,000,000 Endowment Fund which the hospital and medical school are seeking. More than $600,000 of the fund has been pledged and when the second million is being raised, Mr. James C. Brady will make a second contribution of $125,000 and Mr. Vincent Astor will supplement his first contribution with another of $75,000.

In awarding the scholarship prizes the committee of the Post-Graduate Medical School will consider the possibilities of public service of each candidate and the recommendations of State and county medical associations. The scholarships will not be confined to a small area, but will be distributed widely over the country.

In speaking of the need for a post-graduate endowment, Dr. John G. Bowman of the American College of Surgeons is reported to have made the following statements:

"There has been a revolution in the hospital world in the last two years. There are about 7,500 hospitals in this country and Canada, of which about 1,300 are general. Two years ago only 198 general hospitals had laboratories and record systems. Today, about 500 have them.

"Even now some doctors do not know how to diagnose cases by the results of laboratory tests, and are realizing that they must learn. The Post-Graduate is the outstanding hospital of the country where practicing physicians can go to learn this important science.

"Last year 15,000 women died in childbirth in the United States. That means that one out of every 154 women died while becoming mothers. When women demand better care that condition will be changed. It rests with institutions like Post-Graduate to teach the doctors and perform a real service to the community.

"Twenty-eight hundred physicians enrolled in the Army Medical Corps during the war had to be sent back to medical schools for further training.

"Today South America, where physicians on the whole are better trained than in the United States, is sending 150 doctors to America to make a survey and report on what we have to offer. There will be a constant flow of student material from that continent, and Post-Graduate should have its share of them.

"The medical school and hospital should be prepared for its great opportunity. I strongly indorse the campaign for a $2,000,000 endowment fund."

Proposal of Bills to Limit Drug Prescriptions.—At a recent hearing in New York before the Senate Public Health Committee, a series of bills making it unlawful for a physician to prescribe narcotic drugs, except in the treatment of diseases other than addiction, were discussed and denounced by a number of physicians, who expressed their belief that those desiring the promotion of such bills were interested financially in sanitariums to which wealthy drug addicts would thus be driven.

Investigation to be Conducted by General Gorgas.—Major-General William C. Gorgas, former surgeon-general of the United States Army, arrived in New York on April 16 from Lima, Peru. He is on his way to the West African coast, where he is to investigate for the Government of Peru conditions respecting the spread and control of tropical fevers. General Gorgas has been engaged by Peru to supervise and direct the sanitary regulations for checking the spread of the disease in that country.

Decrease in the Death Rate from Cancer.—The American Society for the Control of Cancer has announced that for the first time since the organization of the Society there has been a decrease in the cancer death rate for two consecutive years, 1917 and 1918. The figures are encouraging and indicate that the influence of the Society is beginning to show results.

BOSTON AND MASSACHUSETTS.

Week's Death Rate in Boston.—During the week ending April 24, 1920, the number of deaths reported was 219 against 246 last year, with a rate of 14.13 against 16.11 last year. There were 48 deaths under one year of age against 41 last year.

The number of cases of principal reportable diseases were: Diphtheria, 35; scarlet fever, 61; measles, 193; whooping cough, 63; typhoid fever, 2; tuberculosis, 55.

Included in the above were the following cases of non-residents: Diphtheria, 5; scarlet fever, 13; measles, 4; tuberculosis, 10.

Total deaths from these diseases were: Diphtheria, 2; measles, 1; whooping cough, 2 tuberculosis, 17.

Included in the above were the following non-residents: Diphtheria, 1; whooping cough, 1; tuberculosis, 1.

Influenza cases, 7; influenza deaths, 1.

The Lawrence General Hospital.—The report of the Lawrence General Hospital for the year ending August 31, 1919, records the activities of the hospital during the forty-fourth year of its existence. During the epidemic of influenza, the hospital capacity was taxed to the utmost. In order to give patients the benefit of open air treatment, there was provided by the state authorities, with the coöperation of the Lawrence Chapter of the Red Cross, a military tent hospital on Emery Hill; some of the convalescent patients from the hospital there received care and treatment. From September 25 to November 1, the hospital cared for one hundred and forty-two influenza and pneumonia patients. When it became too cold for the use of tents for patients, cubicles were built in the hospital grounds and the services of the hospital nurses were made available.

All the departments of the Lawrence General Hospital showed a normal growth during the year except the Out-Patient Department. The law obliging mills to employ nurses for the care of their minor illnesses and accidents had the effect of diminishing by almost one-half the number of patients usually sent to the hospital. There were treated only 1,218 patients, compared with 2, 250 the preceding year. There have been some changes and additions made at the hospital. The laboratory has been improved and a technician employed, thus increasing the service which can be rendered doctors in the taking of diagnoses of diseases, and in making tests and doing microscopic work. The hospital's x-ray facilities have been increased by the installation of a better control of the electricity so that both the power and quantity may be regulated at the same time. Nine hundred and eighty-five x-rays were taken during the year, an increase of two hundred and ninety over the year before. A motor ambulance has been secured for the hospital by the kindness of a friend. In order to aid the needy people of the city, the hospital hopes to be able to establish, before long, a Medical Out-Patient Department; this is especially desirable as the usefulness of the Surgical Out-Patient Department apparently is decreasing.

There were admitted to the hospital during the year 2576 new patients, making a total number of 2,648 cared for during the year. The death rate was .0925. There were treated 846 medical cases, 1,244 surgical, and 282 obstetrical cases. Two hundred and seventy-six babies were born. There were 528 orthopedic out-patients, 147 of whom were new cases. The number of patients admitted to the Out-Patient Department was 1,218. The hospital nurses made a total number of 8,815 visits. A class of sixteen nurses was graduated from the Training School.

Fund for Central New England Tuberculosis Sanatorium.—An effort is being made to secure $50,000 to complete the building fund for the Central New England Tuberculosis Sanatorium at Rutland. The sum of $30,978.38 has been raised already. The people of moderate means in New England need very definitely better facilities for medical care in the treatment of tuberculosis.

NEW ENGLAND NOTES.

New England War Relief Funds.—The principal New England War Relief Funds have announced the following contributions:

American Fund for French Wounded, for the American Hospital at Rheims	$340,044.04
Italian War Relief Fund	325,764.00
Friends of Poland.........	145,087.88

Obituary.

RICHARD JAMES PLUMER GOODWIN, M.D.

Dr. Richard James Plumer Goodwin, a retired Fellow of the Massachusetts Medical Society, died at his home in Malden, April 19, 1920, at the age of 82, after a long illness. Dr. Goodwin was born in the North End of Boston, and was the son of Richard Hanson and Mary Ann Roberts Goodwin. He was educated in the Eliot School and was graduated from Harvard Medical School in the class of '65. He was married on December 29, 1859, to Josephine Louisa Allen, daughter of Captain and Mrs. Ezra Allen of Boston, and settled in Malden.

At the outbreak of the Civil War he enlisted as an army surgeon and served until the close. Then he went to Manchester, N. H., in charge of the United States Army hospital, remaining twenty years. He removed to East Boston, where he became associated with Dr. Benjamin Franklin Campbell, a graduate of the Harvard Medical class of 1857, in general practice, and remained there until January 1, 1890, when he went to Malden, and retired from active practice in 1903.

Dr. Goodwin's wife died twenty-seven years ago. He is survived by six daughters. He was a Mason and a member of the First Congregational Church of Malden.

Miscellany.

HEALTH DIVIDENDS YOU HAVE DRAWN.*

By Stanley H. Osborn, M.D., C.P.H., Boston,

Epidemiologist, Massachusetts Department of Public Health.

The residents of Massachusetts have not realized the decrease in deaths from communicable diseases in the state during the past few years because of the gradual manner in which they have diminished. In order that they may realize a few of the results obtained, in part at least, by the expenditure of funds by their local boards of health and the State Department of Public Health, this article has been written

To show the results of the progress of preventive medicine in the Commonwealth, there are given below the median and average number of deaths and death rates for the more prominent communicable diseases for the three ten-year periods 1890-99, 1900-09, and 1910-19. The statistics for the single year 1919 are given also to show that the deaths and death rates are still on the downward trend, despite the increase in population. The factors common in the reduction of all diseases have been isolation of cases and quarantine of contacts.

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* This article will also appear in the May-June bulletin of the Massachusetts Department of Public Health.

Population. The population of the state has increased greatly since 1890 and is given, the better to appreciate the decrease in deaths with an increasing population.

POPULATION OF MASSACHUSETTS.

YEAR	POPULATION
1890	2,238,943
1900	2,805,346
1910	3,380,151
1919†	4,033,826

† Estimated from 1915 state and 1910 federal censuses.

TYPHOID FEVER.

	DEATHS		DEATH RATE (PER 100,000)	
PERIOD	Median	Average	Median	Average
1890-1899	737	727	29.4	29.5
1900-1909	518	501	16.6	16.7
1910-1919	258	239	7.0	6.6
1919-	102 deaths		Death rate 2.6	

Briefly stated, the factors in reducing typhoid fever have been the improvement in water and milk supplies, sewage disposal, general sanitation, and the typhoid vaccine. In 1917, routine work was begun on the investigation of cases, particularly in an effort to locate typhoid bacilli carriers. Persistent and increasing efforts by the local boards of health and state district health officers brought to light 10 carriers in 1917, 7 in 1918, and 13 in 1919. Periodically each carrier is looked up to be sure that he is not engaged in an occupation where food is handled and a danger to others.

DIPHTHERIA.

	DEATHS		DEATH RATE (PER 100,000)	
PERIOD	Median	Average	Median	Average
1890-1899	1,440	1,413	60.3	57.6
1900-1909	749	867	23.9	29.0
1910-1919	627	638	17.1	17.3
1919-	591 deaths		Death rate 14.8	

The special factor in diphtheria which assisted in the lowering of the death rate is diphtheria antitoxin, which was introduced in 1894 and a few years after became universally used. Prior to 1894, from twenty to thirty died out of every one hundred ill with diphtheria, but in 1919 only seven children died out of each one hundred cases of diphtheria.

A remarkable fact in diphtheria fatality has been demonstrated in Paris and reported by Roux in the Office Internationel d'Hygiene Publique, 1919, XI, No. 11. In the Children's Hospital in Paris there were 15,271 cases of diphtheria for the five years, 1914-1919. Of this number, only 378 died, giving a fatality rate of 2.64 per cent. This indicates that the fatality rate of 7.2 per cent. for Massachusetts is still capable of being reduced.

SMALLPOX.

	DEATHS		DEATH RATE (PER 100,000)	
PERIOD	Median	Average	Median	Average
1890-1899	3	7	0.1	0.3
1900-1909	5	42	0.15	1.8
1910-1919	0	2	0.01	0.07
1919	2 deaths		Death rate 0.95	

The particular factor in the prevention of smallpox is vaccination. By this means, this disease has been controlled, but even in modern times prevails in the communities where groups of anti-vaccinationists are actively opposing vaccination, the chief means of protecting their community against smallpox.

The last great epidemic in Massachusetts was in 1901-1903, when 403 persons died of the disease. This gave the 1900-1909 period, the high death rate given above in the average, the median not being affected.

During the last decade, the deaths have been from a smallpox strain, from foreign lands, gaining a foothold in the unvaccinated. Thus, in 1915, there were nine deaths in 24 cases.

PULMONARY TUBERCULOSIS.

	DEATHS		DEATH RATE (PER 100,000)	
PERIOD	Median	Average	Median	Average
1890-1899	5,505	5,506	223.2	224.0
1900-1909	4,693	4,724	156.6	157.9
1910-1919	4.315	4,421	119.0	119.7
	4,188 deaths		Death rate 104.8	

The death rate for pulmonary tuberculosis declined steadily until 1916, when it increased to 118.2 as compared with 113.2 in 1915. The rate increased to 120.5 in 1917 and 127.8 in 1918, but promptly fell at the ending of the war, the rate for 1919 being 104.8 Influenza played a part in the huge rate for 1918, but all of the factors responsible for this fluctuation are not as yet known.

SCARLET FEVER.

	DEATHS		DEATH RATE (PER 100,000)	
PERIOD	Median	Average	Median	Average
1890-1899	338	412	11.5	15.8
1900-1909	299	284	10.0	9.9
1910-1919	156	173	4.1	4.8
1919-	130 deaths		Death rate 3.3	

MEASLES.

Period	Deaths		Death Rate (per 100,000)	
	Median	Average	Median	Average
1890-1899	127	155	5.2	6.3
1900-1909	192	228	6.4	7.6
1910-1919	263	278	7.6	7.4
1919-	183 deaths		Death rate 4.6	

WHOOPING COUGH.

Period	Deaths		Death Rate (per 100,000)	
	Median	Average	Median	Average
1890-1899	278	294	11.2	11.9
1900-1909	269	303	8.3	10.1
1910-1919	263	307	7.2	8.2
1919-	319 deaths		Death rate 7.6	

Of these three diseases, only one, scarlet fever, is controlled to any great extent. Deaths from measles and whooping cough, instead of decreasing, had increased to a certain degree as the population in the state has increased, which is clearly indicated by the foregoing table. Whooping cough was greatly affected by influenza, there being 240 deaths in 1917, 699 deaths in 1918, the epidemic year, and 319 deaths in 1919. Thus the average deaths and rate for the 1910-1919 period is higher than would have been the case if the influenza epidemic had not occurred.

It is hard for people to realize that there are more deaths from measles and whooping cough than from scarlet fever. Greater efforts in school hygiene would seem the only way in which this problem can successfully be coped with, combined with the education of parents, acquainting them with the necessity of the observation of quarantine and isolation procedures.

In other diseases, the work goes on to reduce the deaths and to treat disease to a successful outcome, particularly with biological products.

In anthrax, prior to 1916, the fatality rate ranged from 12.5 per cent. in 1914 to 40.0 per cent. in 1908. In 1919, the fatality rate was 5.5 per cent. This remarkable reduction in the fatality of this disease has been brought about by treating the case with corrosive poultices, rest in bed, liquid diet, the use of anthrax serum, and, above all, not operating on the case.

The use of serum in the treatment of epidemic cerebrospinal meningitis has decreased the fatality rate of this disease from 95.4 per cent. in 1911 to 69.9 per cent. in 1919.

The checking up of all dogs suspected of being rabid and urging the use of the anti-rabic treatment by all persons bitten by a dog, whose head showed the presence of Negri bodies on laboratory examination, has practically eliminated human rabies from the state. Prior to the free distribution of this treatment by the department through the courtesy of the U. S. Public Health Service, who make the product, there were from two to eight deaths from human rabies each year. From 1916 to 1919 there was only one death from human rabies.

Correspondence.

THE MEDICAL PROFESSION AND LEONARD WOOD.

There has recently been published in the daily press the following letter, signed by members of the Boston profession:

For the first time by a presidential candidate, a definite statement has been made by General Wood regarding the need of correlating or possibly centralizing the various bureaus dealing with matters of public health. An individual may neglect his health, expose himself unnecessarily to disease, take patent medicines if he desires, and select his own doctor. The nation cannot afford to take any such chances with its citizens. The draft in the late war brought to the attention of everyone the fact that it had been doing so.

There is no better example of the unbusinesslike way we conduct our national affairs than the scattered groups which concern themselves with the important matters relating to public health. The Bureau of Public Health, which is responsible for our national quarantine, needs support and strengthening. Curiously enough it is a child of the Treasury Department. The Bureau of Chemistry, responsible for the standardization of drugs, and also the Bureau of Animal Indusry, responsible for the health of the nation's livestock, which largely concerns the health of the people as well, is a branch of the Agricultural Department. The assembling of vital statistics, which underlies all our knowledge of disease and its prevalence, is made by a branch of the Bureau of the Census, which is in the Department of Commerce. Thus the Department of Commerce has recently distributed widely among the medical profession a pamphlet entitled "The Special Tables of Mortality for Influenza and Pneumonia;" and so the department of Commerce deals with a multitude of subjects so divergent as the prevalence of cancer, of insanity, and feeble-mindedness.

Efforts have been made by leaders in the medical profession to have these various bureaus dealing with matters of public health brought together. These efforts have all been unavailing, through lack of any appreciation of the great importance to the nation of a strong national Department of Health, such as other countries have long since established. The country has been aroused to these highly unsatisfactory conditions, and the present is the first real opportunity to have them corrected by bringing these various departments under a single organization.

Leonard Wood chances to have had a medical training, and sees these things more clearly than most others. It is unnecessary to recall what the country, and indeed the world, owes him for what was done in Cuba. Had he not by chance been governor of the island, Walter Reed and his associates would probably not have been permitted to undertake the investigation which led to the stamping out of yellow fever, one of the great contributions not only to the health and happiness but to the commercial prosperity of this hemisphere.

It is not often that a physician has an opportunity to show qualities of statesmanship. But there is no reason why a medical training should not be as valuable a preparation for this as a legal training. We have had some good examples of late—Clemenceau, and the newly-appointed British ambassador to Washington. Certainly at this particular juncture what the country needs is someone who knows enough about psychology and human behavior to lead our quarrelsome and restless national groups into proper channels, and to get them to work together for common rather than purely selfish purposes.

We feel that Leonard Wood is more likely to do this than any other candidate we know. British and French colonial governors have spoken of him as the best colonial governor any nation ever sent out—not because he established a good government in Cuba and rehabilitated Havana, but because he accomplished the impossible thing in making Spaniards and Cubans, after centuries of enmity and strife, bury their animosities and live peacefully together. This by persuasion, not by force, for force cannot accomplish these things.

Leonard Wood stands for law and order, and is more likely in this period of labor unrest to keep the country steady than any other person in sight. He succeeded in winning the approbation of labor and capital in the Gary strike through his sympathetic understanding, his deep knowledge of human nature and his desire to give a square deal to all interests.

Leonard Wood, moreover, is not only an American with the kind of family the country could well be proud to see in the White House, but like his great friend, Rosevelt, he too has been a student of foreign affairs and has shown a remarkable foresight in predicting international events. Owing to these qualities there is no other American who stands higher in the respect and admiration of foreign nations or has been tried in as many fields as has General Wood. One thing the country may be sure of should Leonard Wood be elected, namely, that he would surround himself by a Cabinet of wise and well-chosen advisers, selected without regard to any present political opposition. The country would then certainly feel at ease.

Leonard Wood has been a success in every field in which he has been tried. We have rarely had an opportunity to vote for a man who has proved himself a statesman and diplomat, a business administrator, an organizer, a champion of law and order, a leader and a sound judge of his fellow men.

Henry Jackson,
Harvey Cushing,
Hugh Williams,
Edwin A. Locke,
Franklin G. Balch,
John T. Bottomley.

NARCOTIC PRESCRIPTIONS SHOULD BE WRITTEN IN INK.

May 4, 1920.

Mr. Editor:—

At a recent meeting of the Boston Association of Retail Druggists attention was called to the fact that some doctors are writing narcotic prescriptions with pencil instead of ink or indelible pencil, and when their attention has been called to the fact, have resented it, thereby causing a possible friction between doctor and pharmacist where none but the best of feeling should exist.

Realizing that the very large majority of doctors wish to conform to the law in every respect, could you not through the medium of your Journal or some other medium call attention to Art. 119, page 52, of Regulations 35?

Thanking you for the favor, I remain

Yours very truly,
Chas. H. Davis, *Sec'y.*

AN EARLY CASE OF PULMONARY SYPHILIS, AND ITS CURE.

Mr. Editor:—

In Gaucher's book, "La Syphilis des Viscères et de l'Appareil Locomoteur," occurs the following interesting quotation from Brambilla's case report, written in 1777:

Translated, it reads: "An electuary was ordered for a patient supposed to be nearly moribund from advanced pulmonary tuberculosis. Through a mistake of the apothecary, the electuary was given to a syphilitic patient, with orders to use it as an innunction. The phthisical patient received the mercurial ointment, with orders to take it internally, which directions were complied with t. i. d. To the great wonder of the physician a cure resulted of the apparently hopeless case. Some time afterward he learned by accident from the apothecary how the wonderful cure was effected."

Yours truly,
Wm. Pearce Coues, M.D.

31 Massachusetts Avenue, Boston, Massachusetts.

RECENT DEATHS.

Sir Anderson Stuart died on February 29, at the age of 64 years. He had been professor of physiology in the University of Sydney since 1883, and the dean of its medical faculty.

Dr. Sidney Freeman Wilcox, of New York, a widely known surgeon and consulting physician for hospitals in New York, New Jersey, Connecticut, and Massachusetts, died of heart disease at Middletown, N. Y., recently while performing an operation at the Thrall Hospital.

Dr. Wilcox was professor of clinical surgery in New York Medical College and Hospital for Women from 1893 to 1915, and was professor emeritus at the time of his death. He was graduated from the New York Medical College in 1880.

He was born, August 13, 1855, at Fort Atkinson, Wisconsin. At the time of his death he was consulting surgeon for hospitals in New York, Passaic, New Jersey, New Haven, Connecticut, and Springfield, Massachusetts. He was a Fellow of the American College of Surgeons, and held membership in several New York and Garden City, Long Island, clubs. His home was in Garden City.

Dr. James Wright Markoe, whose death has been announced, was the son of Dr. Thomas Masters Markoe, a well-known surgeon. Dr. Markoe received his early education at St. Paul's School in Concord, New Hampshire, and obtained his diploma from the College of Physicians and Surgeons in New York, in 1885. He spent one year in research study at Munich, Germany, taking a post-graduate course. Upon his return to the United States he became the first house surgeon at the Sloane Maternity Hospital in New York. He occupied a chair of medicine at the City College of New York up to the time of his death. Through Dr. Markoe's efforts the Lying-in Hospital was first established on the East Side of New York; Dr. Markoe was its attending surgeon and chief consultant. He was associated with many state and city medical societies. Dr. Markoe is survived by his widow and one daughter.

Dr. Edwin Llewellyn Chase of Shrewsbury, a Fellow of the Massachusetts Medical Society, died April 30, 1920, aged 49. He was a graduate of the Baltimore University School of Medicine in 1898.

The Boston Medical and Surgical Journal

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DOCTORS IN UNIFORM.*

By Harold W. Dana, M.D., Boston.

All my life I had looked upon the title of *Doctor* as something to be desired, to be reverenced, a mark of definite distinction, to be lived up to. In a republic where titles are few and far between, and in this latitude where Colonels are scarce, being addressed as Doctor distinguished one from the common herd. In New England the old ideas regarding the so-called "learned professions," still persist; in most communities the medical profession is still looked up to, and the doctor stands near the front in prominence, in social position, in civic welfare endeavors. Here in New England we are close enough to large cities and high-grade medical schools and hospitals so that most of us have a moderate amount of education and a certain degree of ability or we cannot continue to practice in the community. In a way I looked upon doctors as a class as above the average in intelligence.

Life at Greenleaf was an awakening in quite a few ways. The Army required for its programme to include 1919, a vast number of medical officers, and these could be obtained only from among men who were already physicians. When those in the profession who were over the age limit, unfit physically, or needed at home were omitted from the list of doctors available for army service, so many of the remainder were needed for the army programme that men had to be taken without too close a scrutiny of their professional fitness. The men commissioned in the Medical Reserve Corps were selected by boards all over the country, and these boards varied greatly in their standards of fitness for commission, and in the ranks given to applicants. Many of the best men in this section went into the service as lieutenants, and some of them continued in this rank until discharged. From some of the small southern towns, boys just out of medical schools, without college or hospital training, and but a few months in practice, with no military training as an excuse, started in the service as captains. Men of medicine came to Greenleaf from all over the country, from all sorts of schools, and with all degrees of training or lack of it. After more than eighteen months of membership in the local examining board for the Medical Reserve Corps, I think that New England has a right to be proud of the class of physicians she furnished to the Army as compared with other sections.

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* Read before the Brookline Medical Club, March 3, 1919.

Without making any invidious distinctions, for there were men of the highest character and ability coming into active service in the Medical Corps at great personal sacrifice, even after the armistice had been signed, the first year of our participation in the war drained the profession of a very large proportion of the best physicians available for service, and the quality of the doctors at Oglethorpe as a whole went steadily down hill especially at the end.

It was early in May, 1918, when I got to camp, to start in again as a rookie after a year of active service. As a general thing, the men who had been two weeks or more in camp were very friendly and helpful to the new men in getting used to the ropes and getting their stuff arranged just so. The position of a rookie officer in a camp of this sort is peculiar, and unless one has a good deal of adaptability, serenity of temperament, and a sense of humor, it is quite trying. Actually, we were regularly commissioned officers of the Army, entitled to act as such and to wear the uniform of officers. While we were slightly to be distinguished from enlisted men, by wearing officers' hat cords and neckties, and were supposed to be saluted by the enlisted men, as far as the Training Corps was concerned, we were on the status of privates. We left off our insignia, we saluted our company officers regardless of our actual relative rank, and we performed all the duties that privates would perform, with the exception of washing our mess kits. The heartburn that some of the older men went through! One man in my barracks, a lieutenant, fifty years old, from a small town in a southern state, had been a big bug in his home town. He told me at least a dozen times that he had never before in his life had to shine his own shoes, and he was proud of the fact. He had been president of a fraternal insurance society; he claimed that he was a great surgeon; he would talk for hours about his troubles to any one who would listen; and he could not understand how any one of his importance could be so badly treated as he was. You have no idea of the fear, superstitious reverence, and actual hatred with which my barracks mates viewed the rulings of their fellow doctors lucky enough to be appointed sergeants top sergeant, or battalion sergeant major. These rulings of course had to do with the routine discipline and paper work, and while the poor non-coms were actually only carrying out their instructions from above, and while all of the apparently absurd insistence on correctness in the paper work was purely for the purpose of teaching the correct method, and was itself in a way disciplinary, the men took it as personal cussedness on the part of the sergeants. I say this somewhat feelingly. When I slept in barracks I was fairly popular and had quite a few friends. Then it was discovered that I had done paper work for a year before coming to camp, and I was made battalion sergeant major, after two weeks; and for the next two months I lost, one by one, every friend that I ever had in that camp. It was only a few days before I left Greenleaf that one of my later contemporaries was told by somebody that I was a terror when I was sergeant major. The camp life was fine, the drill was fine, unless we got some tough and heartless brute to run us around in the hot sun until our tongues hung out, and the comradeship was wonderful. There was, however, a limit to the length of time that an intelligent man relished being treated like a child. We went to bed at 9.30; we could not go to town without permission; and if Monsieur le Docteur Fizzledejig of the Transcaucasus came to camp and insisted upon telling us in fluent Volapuk of the diseases which are liable to attack trained fleas in his benighted country, we each and all of us had to offer him a tremendous ovation that evening, regardless of the date we had previously made with our best girl; failing that, we had to submit to our battalion commander in writing, the next morning, a sufficiently plausible excuse for our dereliction to escape the loss of the week-end privileges. Grandmothers' funerals did not go. It had to be pretty good stuff to get by an experienced and cankered sergeant major. Being more alert, adaptable, closer to medical school years, and inherently more military, the company instructors, battalion commanders and adjutants were, as a rule, young men. This was a source of grievance to the older doctors in several ways. The youngsters were not always polite and considerate—the old-timers resented their youth anyway—and often the instructors set a pace for drills and marches unsuited to those of us who were elderly and corpulent. The life was good, but too much of it was a great plenty. The course in theory in my time was of six weeks' duration. That would have been long enough to fit most men for their duties, and not so long as to be burdensome. There was one man in my barracks, however, a major, head of a base hospital, a good surgeon, but fifty-five years old, who had been in camp as a rookie officer for five months, awaiting the mobilization of his unit. The dear old fellow bore it all without a whimper, did his cot-scrubbing and floor-sweeping better than any man there, and he certainly did make those barracks a pleasanter place for all of us to be in. This was not an isolated instance; there were many men who had been in camp as cadets for from four to eight months, without being assigned to any job, without being sent out of camp, and, so far as we knew, without any definite reason. That sort of thing gets very monotonous. I remember another major, also head of a base unit, who came to camp in the expectation of having a special motor car and a valet to wait on him. He was compelled to keep on expecting. The first morning of his stay—that is, on his second morning in camp,—he came to setting-up drill in his best heavy serge uniform, wearing his latrine cap, as we called the dress cap, his boots, and his spurs. It was a nice warm forenoon in May. The drillmaster was in pretty good form that morning, and it was not so very long before the ornamental major looked somewhat wilted. I confess to enjoying that drill. A pleasing example of the opposite attitude was furnished by another major, also the prospective head of a base hospital, a celebrated New York orthopedist and a graduate of a Boston hospital, who accepted his position as a rookie with calm good nature.

Of course, perhaps more than any other class of educated men, doctors needed just the sort of discipline that they received at Greenleaf. As a class of men, we are not only undisciplined, but we resent having to live a routine life and having to obey some one else. In our own world at home, we are little tin gods, somewhat spoiled by our families and by our patients. We do not have to serve on juries; lack of punctuality is one of our most cherished prerogatives, and in our home lives, the world more or less revolves around us and exists in part that we may be able to practise medicine. As a result of this, the doctor does not become a soldier readily, as a general thing. He is too much of an individualist. Those of us who have reached middle age are not flexible enough as a rule to become either good drillmasters or well-drilled soldiers. As a class, the doctors at Greenleaf did not look the part, tending rather to slouchiness of carriage and of dress. The greatest blow that my pride in the title of Doctor has ever received and one from which I have not yet recovered, fell one morning at battalion drill. Our company had been doing the evolutions in more than usually clumsy and ragged manner, when our battalion commander chanced to glance our way. He came over to talk to us, and he certainly had something to say. After watching our alleged drill for a few moments, he sneered at us, "Doctors, in uniform." That was all, but it expressed a bookful. We had thought that we were soldiers; that at least we were becoming such; but alas! all that we might ever hope to be did not reach beyond being doctors wearing the uniform. To such a point was this idea burned into my mind, and to such an extent was the title of *Doctor* a mark of opprobrium in camp, that I cannot help a slight shudder at being so addressed today, though I expect to get over it in time.

It does not seem to me that the same condition would be true of the doctors as a whole around here, but the physicians in camp were very childish. As the Camp Surgeon often expressed it, "Doctors are perfect babies and have to be treated as such." It was evidenced in such ways as this. Men came to sick call for the slightest ailments; and if these were not treated with the greatest consideration and sympathy, they went and complained to the commander of the camp. Doctors, who more than other men should have known the discomforts of night calls, would drag the man covering this duty out of his bed for something from which they had been suffering all day, or for which treatment in the morning would have done just as well; and they invariably demanded to be sent to hospital for minor ailments. Fortunately I had little to do with Sick Call, or I should have been in trouble in short order. In one respect, the Sick Call was very simple. The doctor would just walk in, give us the exact diagnosis of his case, tell us how it should be treated, and if all of his recommendations were followed, he departed perfectly satisfied that he at least had had good medical attention. But if any man received a call down, he sulked and felt a personal grudge, and as a rule protested to higher authority.

One amusing instance was of a man who had just come to camp, bringing with him a large black cotton umbrella. The men in his barracks determined to have some fun with him, so they told him that black umbrellas were not regulation. Let me explain that soldiers do not carry umbrellas at all. However, this earnest soul was prevailed upon by schemers to go over to the Quartermaster depot, three miles away, to attempt to trade his black gamp for one of the regulation khaki shade. As a result of his attempt to provide himself with this useful article, a general order was issued next morning forbidding any hazing of newcomers, so I judge the victim took his troubles to Headquarters. While this was rather mild as hazing, and certainly had a large element of real wit in it as a joke, it was the only instance of hazing of any kind that I knew of. As a rule, the newcomer was given every possible help toward finding himself.

Some of the men practising medicine in some of the southern towns were unbelievably poorly trained. One man whom I assisted in examining for admission to the army, was asked how he would make a diagnosis between a typical lobar pneumonia and a typical pleurisy with effusion. After considerable thought, he said that he was afraid that he could not answer that question, as he had never treated a case of either condition nor a case of typhoid. Asked what he would do to treat a burn of the third degree, since he said that he was a foundry physician and that most of his practice consisted in the treatment of burns, he stated that he would use antiphlogistine. Failing this medicament, no alternative suggested itself to his mind, nor could he think of any additional treatment. He admitted that he did not use and did not possess a stethoscope, a microscope, or a blood pressure outfit, and that he never examined the urine. Another candidate who claimed to specialize in internal medicine, told me that the only intestinal parasites that he knew were typhoid and paratyphoid.

Chickamauga Park has climate and lots of it. For a year-around military camp in the United States, it probably could not be bettered, but that does not detract from the climate. In January, 1918, it went down to minus two of the thermometer, I have been told. I can testify to two above zero in January, 1919, and also to 114 in the shade in July, 1918. When it rained, it rained; and when lightning fell, there was no question as to what was going on, furnishing a pleasing introduction to the imminence of sudden death in France. But, O Boy! the mud. They tell me that there is mud in Texas, and there very well may be—I am not a quarrelsome person and I will believe anything once—but if Texas mud has anything on Oglethorpe when the frost is coming out of the ground, then I'm from Missouri. The water supply of the camp interested me. The water comes from the Tennessee river, and is chlorinated after filtration. You get used to it after a while, but for one who drinks spring water because he dislikes the taste of the Cochituate article, strong chlorine infusion is some brew. And sometmes in the shower baths there would be a sufficient escape of gas from the water to make one sneeze.

Some wonderful things came to us in the draft. An amazing bunch from Oklahoma came our way: cowboys, oil men, and Indians, chiefly Cherokees. It seemed a pity to put a crowd of natural scrappers like that into the army as non-combatants in the Medical Department. One boy came to me for examination, with a peculiar, raw, snake-like track on his neck. I asked him about it, but he was shy and would not tell me what the mark was. Then I guessed. "Somebody put a rope on you?" I asked him. "Yes," he said, "the boys were playing some last night and roped me." The Oklahoma outfit gave a Wild West show that Saturday night that was the real thing. We had some Mennonites in the lot, and two Israelites, a small sect of Christians with smooth-shaven faces, hair down to their shoulders, and wearing long black robes. By careful manipulation of the line of inductants, I got me an Israelite for cardio-vascular examination, and obtained an unholy joy from putting this naked and scandalously sacrilegious-appearing youth through the "hopping test," hopping gravely by his side myself to the wonder of all beholders. Of course these were conscientious objectors, and being useless for any military purpose, they naturally were put into the Medical Department.

The professional instruction at Greenleaf was really wonderful. Probably there is no post-graduate school in the world that has ever touched the Army school at Greenleaf, over the range of subjects covered there. Those men who needed a general review of the subject went to General Schools of Medicine and Surgery. There was an excellent course in operative surgery on the cadaver, conducted at Chattanooga. There was a wonderful course on heart and lungs. A thoroughly up-to-date equipment, with all the newest methods of localization, and some of the greatest teachers in the country, made the course in x-ray unapproachable anywhere. For the School of Sanitation, full-sized workable models of all the different types of apparatus had been constructed. There were fine schools for teaching eye, ear, nose, and throat, and a very elaborate course of instruction in orthopedics. The schools of surgery, orthopedics, and x-ray were supplemented by courses given in New York, Boston, and Philadelphia. There was also a School of Neuropsychiatry. To all of the men whom I knew or with whom I talked, who had had the opportunity to attend the special schools of medicine at Greenleaf, the advantages of having had this special training in their own line seemed to be great. Personally I am very certain that no man who went to the Medical Officers' Training Camp at Greenleaf, whether he knew much or little when he came to camp, left camp without being vastly benefited physically and professionally; and the experience is one that no man can ever regret, even if he missed the great opportunity of serving his country overseas.

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THE PRODUCT OF A UROLOGICAL CLINIC.

By William C. Quinby, M.D., Boston.

(Continued from page 508.)

ULCER OF THE BLADDER.

Woman, No. 7699, aged 48, married, 14-xi-17. Ulcer of the bladder secondary to endocervicitis and endometritis. No operation. Patient was discharged after fourteen days. Result: 5-viii-18. Has had a supravaginal hysterectomy performed at the Women's Free Hospital, with relief of symptoms.

TABETIC BLADDER.

1. Man, No. 7485, aged 50, married, 6-x-17. Tabetic bladder. No operation. Patient treated by intravenous diarsonal. Discharged after seven days. 20-x-17. Intraspinous diarsonal. 17-xi-17. Intraspinous diarsonal. 5-i-18. Intraspinous diarsonal. The last two injections were followed by prostration, obstinate constipation, and pain, in the last instance lasting nearly one month. vii-18. Patient's condition is much improved. Strength is normal. Potency has returned, but he is incontinent regularly at 4 A.M. 16-xii-18. Patient has been emptying bladder by catheter each night, but in spite of this has nocturnal incontinence. Good appetite. Good general health. ℞. Further intraspinous treatment.

2. Man, No. 7077, aged 43, single, 20-vii-17. Cystitis. Tabes. Patient was treated by intraspinal injections. Result: 27-vi-19. Has had seven or eight intraspinal injections. Feels a great deal better. Only rarely is incontinent. Occasional shooting pains in legs and stomach.

TUBERCULOSIS OF THE BLADDER.

Woman, No. 5369, aged 24, 9-ix-16. Question of tuberculosis of the left kidney. Nephrectomy. The kidney was found to be normal, although submucous tubercles in the bladder had been seen by cystoscopy. No complications. Patient was discharged thirteen days after operation. Result: 15-vii-17. Patient entered with pelvic abscess which was drained. This was followed by removal of appendages, which were shown to be tuberculous. Patient made a long convalescence, and was not discharged until 2-i-18. 24-vii-18. Letter from patient stating that she has gained over twenty pounds in the last year, and that she is rapidly gaining strength. The open wound gradually healed over, leaving a discharging sinus, which finally closed, after treatment with bismuth paste.

This case illustrates strikingly the general rule that tuberculosis is never primary in the bladder. It also shows the difficulties of very early diagnosis in this disease. Since the patient was single no pelvic examination was made. Palpation by rectum might or might not have suggested the real source of infection.

NEUROSIS OF BLADDER.

Woman, No. 5067, aged 56, married, 13-vii-16. Neurosis of bladder. A questionable scar in vertex of bladder was found, which might be the result of past ulceration. No operation. Patient is very neurotic. She was discharged after three days. Result: 8-viii-18. Letter from patient states that although general health is better, fundamental trouble is the same. There is still frequency but less pain. She is being treated by her family physician, who believes her trouble to be of a nervous character.

RUPTURE OF BLADDER.

1. Man, No. 5795, aged 35, married, 25-xi-16. Patient was crushed between an automobile and a brick wall, resulting in fracture of the pelvis with rupture of the bladder. Exploratory operation with drainage of bladder. Complications: Early toxemia followed by death on fourth day after entrance to the hospital. Medico legal surgery.

2. Man, No. 7102, aged 55, single, 24-vii-17. Intraperitoneal rupture of bladder; peritonitis; trauma occurred forty-eight hours after entrance. Much bloody fluid found free in abdomen. No reaction. Patient died on third day. Medico-legal autopsy.

CARUNCLE OF URETHRA.

1. Woman, No. 7436, aged 46, married, 27-ix-17. Erosion and overgrowth of urethral orifice. Endocervicitis. Dilatation and curettage of uterus; excision of meatus. No complications. Patient was discharged on tenth day after operation. Result: 15-xii-17. The urethral mucosa is everted at the lower portion of its circumference and is very sensitive to pressure. No further data.

2. Woman, No. 7530, aged 64, 15-x-17. Caruncle of urethra. Excision. No complications. Patient was discharged three days after operation. No further data.

PERINEAL FISTULA.

Man. No. 5713, aged 23, married, 9-xi-16. Perineal urinary fistula following gonorrheal prostatitis. Perineal section with excision of indurated tissue. No complications. Patient was discharged sixteen days after operation. 2-xii-16. Wound healed. No urethral discharge, but entire urine is turbid. Patient was referred to his local doctor with advice as to bladder irrigation, sounds, and massage of prostate. He is entirely free from symptoms now except that he rises once at night to urinate.

This case is an instance of drainage of a prostatic abscess through the perineum, with resultant urinary fistula. There was no stricture present.

STRICTURE OF URETHRA.

1. Man, No. 4996, aged 52, single, 1-vii-16. Extravasation of urine. Stricture. Glycosuria. Acute retention. Perineal section. Extensive gangrene of periurethral tissues. Condition of patient bad. Death on second day.

2. Man, No. 5000, aged 40, single, 3-vii-16. Stricture of urethra. Perineal section. Resection of urethra; 1½ cm. area excised and ends of urethra united by suture. Complications: Two days of fever due to furuncle. Patient discharged on seventeenth day after operation. No further data.

3. Man, No. 5513, aged 32, single, 4-x-16. Long standing stricture of urethra with fistula. External urethrotomy. No complications. Patient was discharged twenty-two days after operation. Result: 8-v-17. Etherization necessary in order to remove filiform retained in bladder after instrumentation. 1-v-18. Patient continues to come for treatment once a week. No. 25 F. is the largest size which the urethra will admit. 14-x-18. Sounds 23-24-25 passed with some difficulty. No pain. Patient feels better. Continues to visit clinic once each month for passage of sounds.

4. Man, No. 5837, aged 48, married, 4-xii-16. Stricture of deep urethra. Perineal section. No complications. Patient was discharged on thirteenth day after operation.

5. Man, No. 6679, aged 40, single, 2-v-17. Stricture of urethra. Perineal section. No complications. Patient discharged thirteen days after operation. Result: 11-x-18. Patient has had sounds passed regularly and now has no urinary difficulty.

6. Man, No. 7306, aged 53, single, 1-ix-17. Stricture. Retention of urine. No operation. Obstruction overcome by sounds. Patient discharged after five days. No further data.

7. Man, No. 7659, aged 77, married, 7-xi-17. Patient entered complaining of incontinence of urine with probable diagnosis of obstructing prostate. No operation. Only pathology found was a stricture, which was treated by bougies and sounds. Discharged sixteen days after entrance. No further data.

8. Man, No. 7844, aged 37, married, 12-xii-17. Stricture and epididymitis. Orchidectomy. Internal urethrotomy. Extensive gangrene of testicle found so that it was necessary to remove it entirely. No complications. Patient was discharged nine days after operation. Result: 22-viii-18. Letter from patient says, "I know not ache or pain, I work like a Trojan, eat like a horse and sleep like a log, and not a sign of trouble with the water works."

9. Man, No. 7889, aged 43, married, 21-xii-17. Stricture of urethra. External urethrotomy. No complications. Patient was discharged on fourth day. Result: 7-ii-18. Urine clear. No. 25-28-29 sounds passed. No further data.

URETHRITIS.

1. Man, No. 6859, aged 47, single, 9-vi-17. chronic posterior urethritis. Epididymitis. In-

guinal hernia. No operation. Only cause found for pain was enlargement of vesicle with consequent interference with urination. Patient was discharged on twelfth day. Result: 14-viii-17. Since leaving hospital has been treated in the Out-Door Department and is much better.

2. Man, No. 7838, aged 28, single, 12-xii-17. Chronic posterior urethritis and prostatitis. No operation. Patient was discharged after seven days to the Out-Door Department for treatment. Result: 6-ii-19. For past six days patient has had right epididymitis for which he has been treated at the Boston Dispensary. 11-iii-19. Patient has been in bed since last note. Epididymitis has cleared up. Both urines clear with a few fine shreds. Right epididymitis is hard and about five times normal size. The lower pole is adherent to the body of the testicle but is not tender. Return after prostatic massage slightly cloudy.

KERATOSIS AND EPITHELIOMA OF PENIS.

Man, No. 7457, aged 45, single, 1-x-17. Keratosis and epithelioma of penis. (1) Local excision of tumor. (2) Block dissection of inguinal glands five days later. Following groin dissection, wound broke down and healing was very slow, accompanied by considerable edema of external genitals. Patient was discharged twenty days after second operation. Result: 25-vi-19. Sister reports that patient has been very well. 1-viii-19 Reëntry. Small keratosis excised. Result of previous operation excellent. No edema left, and no evidence of recurrence.

HYPERTROPHY OF PROSTATE.

1. Man, No. 4699, aged 53, married, 7-v-16. Hypertrophy of prostate. Suprapubic prostatectomy. Usual operation with little bleeding. No complications. Wound healed on nineteenth day. Discharged on the twenty-eighth day after operation. Result: 17-viii-18. Reports that he considers himself cured.

2. Man, No. 5219, aged 60, married, 12-viii-16. Hypertrophy of prostate. (1) Suprapubic cystotomy. (2) Suprapubic prostatectomy eleven days later. Slight opening made in peritoneum. Complications: Severe infection of bladder. Wound healed forty-one days after last operation. Discharge forty-eight days after operation. Letter from doctor says that patient died about two months after discharge from hospital. Cause not stated.

3. Man, No. 5812, aged 58, married, 28-xi-16. Hypertrophy of prostate; inguinal hernia. Suprapubic prostatectomy. Hypertrophy of the middle lobe, but none of either lateral lobe. No infection. No complications. Discharged on tenth day. Result: 22-x-19. A letter from patient's doctor states that he believes the patient to be well and at work.

4. Man, No. 5987, aged 57, 30-xii-16. Hypertrophy and tuberculosis of prostate. Two-stage prostatectomy. There was only a small amount of bleeding. No complications. Patient was discharged twenty days after first operation. Result: 27-v-18. Patient has been entirely well in regard to urinary system since last year. Complains only of dizziness and constipation. The dizziness is evidently due to arteriosclerosis. The urine still contains a few pus shreds. Testes symptomless and except for slight hydrocele are normal.

5. Man, No. 7007, aged 78, married, 9-vii-17. Hypertrophy of prostate; cystitis. Suprapubic prostatectomy. Uninfected bladder. No diverticula. Bleeding moderate. No complications. Discharged on the twentieth day after operation. Report: xi-19. Letter states that patient is well and has not had any pain since operation.

6. Man, No. 7021, aged 67, 11-vii-17. Hypertrophy of prostate. (1) Suprapubic cystotomy. (2) Suprapubic prostatectomy. Usual two-stage operation. No complications. Discharged on the thirty-first day after first operation. Result: 17-vii-18. Patient was in good health for some time. Then noted increase in frequency and pain in bladder. Bladder lavage in Out-Door Department twice weekly. Residual 10 cc. Satisfactory bladder outlet. 4-xi-18. Bladder lavage all summer. Nocturia two or three times. Moderate turbidity. Cystoscope shows on left lateral wall opening of a diverticulum. This is probably the cause of the cystitis. 2-i-19. In hospital for more intensive treatment of cystitis. Excision of diverticulum too risky because of impaired kidneys and poor circulatory condition. xi-19. Excision of diverticulum. No complications or convalescence. Discharged on twenty-ninth day after operation. Since the operation the urine has become almost sparkling, clear, and the frequency is much diminished.

7. Man, No. 7181, aged 45, married, 6-viii-17. Hypertrophy of prostate. Suprapubic prostatectomy. The peritoneum was inadvertently entered, but immediately closed. No complications. The patient was discharged on the eleventh day after operation. Result: 2-ix-17. Wound healed. Feels well. No further data.

8. Man, No. 7220, aged 69, 15-viii-17. Hypertrophy of prostate with acute retention of urine. Necrosis of anterior wall of bladder. Suprapubic prostatectomy. An area in front of the bladder contained pus and the anterior wall was necrotic just above the sphincter. This was probably caused by instrumentation before the patient came to the hospital. No complications. Pathological report showed malignant

changes in portions of the enlargement. Patient was discharged on the twenty-fifth day after operation. Result: 17-vii-18. The patient's general health has been excellent. Has had some frequent and painful urination so that the bladder has been washed once a week during last month. There is 30 cc. of residual, and bladder outlet is not entirely free. 15-iv-19. Patient is still well. There is slight residual with infection. No symptoms. Some inequality is found with instrument at bladder neck, but there is no other evidence of recurrence.

9. Man, No. 7351, aged 59, married, 10-ix-17. Hypertrophy of prostate. Suprapubic prostatectomy. Ball-valve obstruction by middle lobe. The laterals were also enlarged, and ureteric orifices slightly dilated. Complications: Rather a slow closure of wound with fever from in-lying catheter. Discharged twenty-five days after operation. Result: 22-vi-18. Patient's doctor states that his convalescence was uneventful. The suprapubic wound healed well, and the patient feels well and has had no complications since leaving the hospital.

10 Man, No. 7424, aged 62. married, 25-ix-17. Hypertrophy of prostate and inguinal hernia. Repair of hernia, and suprapubic prostatectomy. The obstruction was due to a small median lobe shaped like a marble. No leakage after eleventh day following operation. No complications. The patient was discharged eighteen days after operation. Result: 4-v-18. Well in all respects except for enlargement of left tunica by fluid which was removed by tapping.

11. Man, No. 7439, aged 66, 27-ix-17. Hypertrophy of prostate. Suprapubic prostatectomy. No complications. The patient was discharged eighteen days after operation. Result: 28-vii-18. Letter from patient states he is feeling well and has no urinary trouble Nocturia once. Bowels regular.

12. Man. No 7726, aged 60, widower, 20-xi-17. Hypertrophy of prostate. Suprapubic prostatectomy. Easy enucleation with slight bleeding. Complications: A good deal of discomfort from drainage tube for five days. Discharged on twenty-fourth day after operation in excellent condition. Result: 1-19. The patient called and said he was feeling fine.

13. Man. No 7881, aged 57, married, 20-xii-17. Hypertrophy of prostate. Two-stage suprapubic prostatectomy. No complications. Patient discharged on twenty-eighth day after second operation. Result: 29-vii-18. Letter from patient states he is in perfect condition.

14. Man, No. 7899, aged 59, 24-xii-17. Hypertrophy of prostate for which suprapubic opening had been made at the Malden Hospital in October, 1917. Contracted bladder and badly damaged kidneys. Patient in very precarious condition. Suprapubic prostatectomy, on 5-i-18. Complications: Gradual failure of kidneys due in large measure to infection. Death on 26-i-18. Autopsy showed bilateral pyelonephritis with broncho-pneumonia and septicemia.

15. Man, No. 5740. aged 64, 16-xi-16. Hypertrophy of prostate; cystitis. (1) Cystotomy. (2) Suprapubic prostatectomy nineteen days later. Usual operation except for marked infection. Complications: Steady decline with death from broncho-pneumonia fourteen days after second operation. Also failure of mental condition with apparently no uremia. No autopsy.

16. Man, No. 5879, aged 71, married, 10-xii-16. Hypertrophy of prostate; cancer of stomach. Perineal prostatectomy thirty-six days after gastroenterostomy. The prostate was small and fibrous. No complications. Patient discharged twenty-eight days after second operation. Result: 22-iii-18. Was well for some time after operation, and gained 42 pounds. Then lost appetite and noticed pain across back and epigrastrium. Examination showed marked progress in the gastric carcinoma. No difficulty with bladder.

17. Man, No. 6681, aged 73. married, 2-v-17. Hypertrophy of prostate. Perineal prostatectomy. Uncomplicated prostatectomy of usual type. Pathologist's report: Probable malignant disease. Retention after removal of perineal tube on fourth day relieved by in-lying catheter. Good, but slow, convalescence. Discharged twenty-seven days after operation Reentry: 23-vii-17. A month after discharge had pain in back, right side, and hip. Entered hospital for investigation. Consultation with Dr. Sever. (1) Hypertrophic arthritis of spine. (2) Bone metastases from cancerous prostate. Discharged seventy-five days after entrance, unrelieved. Condition of bladder good. Result: Patient died early in 1918.

18. Man, No. 5443, aged 48, 23-ix-16. Patient complained of pain in scrotum. Median bar hypertrophy. (1) Epididymotomy. (2) Perineal prostatectomy. No complications. Patient was discharged thirty-four days after second operation. Results: 6-vii-18. Patient comes in response to letter. Has felt very well since leaving hospital. Has had no trouble. Urine is clear.

19. Man, No. 6782, aged 72, 24-v-17. Hypertrophy of prostate. Perineal prostatectomy. The lobes had to be removed by scissors owing to the lack of cleavage plane. No complications. The patient was discharged on the twenty-fourth day after operation. Result: 16-vii-18. Patient entirely well since operation. No nocturia. The urine is clear. Potency lost.

20. Man, No. 6773, aged 59, married, 22-v-17. Hypertrophy of prostate. The usual perineal prostatectomy. Complications: Epididymitis lasting from the fifth to the twelfth day after operation. The patient was discharged one month after operation. Result: 14-vii-17. The wound has healed. Patient has no difficulty in urination, but the left epididymis is still painful.

21. Man, No. 5322, aged 51, married, 31-viii-16. Hypertrophy of prostate. Tabes. Perineal prostatectomy. Moderate enlargement of lateral lobes; none of median. There were no complications. The wound healed on the eleventh day. The patient was discharged on the sixteenth day after operation. Result: 2-vii-18. Patient in excellent condition. No straining. Rises once at night to urinate. Erections still active. Has been treated for syphilis by his physician with good results. Still carries a small residual urine.

22. Man, No. 7202. aged 77, 12-viii-17. Hypertrophy of prostate. Perineal prostatectomy. Usual perineal approach; one portion of a lateral lobe impossible to reach, so that a suprapubic opening was made. Anesthesia stormy. Complications: Patient had an attack of auricular flutter on the fifth day after operation, controlled by digitalis. He was discharged on the thirty-eighth day after operation. vii-18. A perfect result: Urine clear; no residual; no frequency.

23. Man, No. 6807, aged 65, 30-v-17. Hypertrophy of prostate. Perineal prostatectomy. Median lobe removed through right cavity Some fever for eighteen days. Sinus not healed on discharge on thirty-fifth day after operation. Reëntry: 8-x-17. Urethro-rectal fistula. Repair of fistula; suprapubic drainage of bladder. Hard dissection through dense scar tissue. Impossible to bring opening into rectum entirely outside sphincter. No complications. Discharged thirty days after operation. Result: 26-vii-18. Symptomatically well. Urine turbid, for which had argyrol instilled once a week. 9-iv-19. Fistula is entirely healed and patient considers himself well in all respects. General health is much improved and patient is working every day with regularity. The urine is slightly turbid.

24. Man, No. 6124, aged 54, 22-i-17. Hypertrophy of prostate. Perineal prostatectomy. Enlargement of small degree, most of difficulty being due to contraction of neck of bladder. No complications. Patient was discharged twenty-seven days after operation. Reëntry: 28-v-17. Since operation has had a small sinus in perineum which has leaked a few drops of urine once or twice each week. Excision of perineal sinus. Urethra dissected free from scar tissue and drained by in-lying catheter. No complications. Patient was discharged on nineteenth day after operation. Result: 16-vii-18. Still has occasional leakage from perineum. Jolting or coughing causes slight incontinence. General condition excellent. ix-18. Sinus through which urine and pus discharge still remains. Urine cloudy with a few shreds. 22-iii-19. Perineal sinus continues to discharge one or two drops of urine occasionally. Urine slightly turbid.

(To be continued.)

Clinical Department.

FAT TRANSPLANTATION AFTER EXCISION OF CICATRICIAL CONTRACTION OF LOWER JAW, WITH REPORT OF A CASE.

By William Reid Morrison, M.D., Boston.

Surgical reconstruction of the face has received a great impetus, because of the interest aroused in this subject, not only resulting from industrial accidents, but also from war wounds.

Injury to the soft tissues may cause a most disfiguring scar, particularly if any necrosis occurs, and the wound becomes infected. The cicatrix itself is usually depressed below the surface of the surrounding skin, causing elevated areas which simulate ulceration of the teeth. The patient is constantly annoyed by questions of solicitous friends as to the cause of the swelling.

Following severe crushing injuries, not only the skin, but the subcutaneous fat, fascia, and muscles may slough, involving the adjacent blood vessels, lymphatics, motor and sensory nerves, with subsequent partial facial paralysis and loss of sensation.

Loss of function of the jaws due to cicatricial contractions is a serious complication, for the patient may be unable to eat any solid food. The average adult cannot work efficiently on a liquid diet only.

Salivary fistulae may develop from injury of Stenson's duct, or the parotid or submaxillary glands, which are to be avoided by the surgeon. Simple or compound fractures may be found involving the antrum of Highmore, or the frontal sinuses, sometimes opening into the buccal cavity or nasal passages.

After excising the scar in the skin, and undermining the surrounding skin as much as necessary, avoiding important structures, the cicatricial tissue may be severed, with a finger in the buccal cavity as a guide. A layer of subcutaneous fat may then be transplanted from the thigh or abdomen, placing the transplant between the adjacent edges of the severed scar tissue, and also under the skin, to fill in any depressed areas. Since the tissues of the face are very vascular, all bleeding must be carefully stopped, and great care should be taken not to incise the mucous membrane of the buccal cavity. Strict asepsis is essential for a successful isograft. Intrapharyngeal ether aids the operator greatly, for the ether cone is dispensed with, and the anesthetist is not in the surgeon's way.

The following industrial accident case was recently referred to the writer for operation by Dr. A. L. McLaren:

J. J. S., twenty-two years of age, single. Family history and past history irrelevant.

Patient stated that on July 10, 1919, he was working at a wharf, pile-driving, and while he was guiding a pile into the proper position with a pole, the pole was struck by the pile-driving hammer weighing about twenty-eight hundred pounds. The pole hit the patient's face, tearing open the right cheek into the buccal cavity. The boy was knocked overboard into the sea-water, and was taken, unconscious, to a public hospital. The record states that there was much necrosis of the soft tissues of the face, and the wound was dressed, its edges being approximated as carefully as possible by the hospital surgeon. The patient was in bed for six days, then was treated in the out-patient clinic. Cicatricial contraction prevented the lower jaw opening, so that the patient could not open his mouth to eat solid food; he could only drink liquid nourishment.

Examination of the case on September 19, 1919, at the writer's office was as follows: Patient presented a depressed, semi-lunar scar of the right cheek, midway between the ear and the mouth. The upper end of the scar was at the level of the lower border of the zygomatic process, passing backward and downward eight centimeters to the middle of the ramus of the lower jaw. The skin between the scar and the midline of the face showed impaired sensation, because of fifth nerve injury, and there was also partial motor involvement of this region, for the patient could not whistle, and could only slightly move the right corner of the mouth (damage of the seventh cranial nerve.) The area between the scar, and the nose and mouth protruded, simulating a swelling due to an ulcerated tooth. Examination of the buccal cavity was negative. The mouth could be opened the distance of one-half of one centimeter between the opposing incisor teeth.

An x-ray plate of the face, and general examination were negative.

A diagnosis was made of cicatricial contraction of the lower jaw, due to scar in the soft tissues of the right cheek. Partial ankylosis of the jaw was considered. Operation was advised and accepted.

On October 3, 1919, the patient entered the Boothby Surgical Hospital. The right face and right thigh were prepared by shaving the skin, soap and water scrub, followed by seventy per cent. alcohol and sterile dressing. The operation was performed on the following day. Nitrous oxide gas and intrapharyngeal ether were given by Dr. Lyman S. Hapgood, Dr. McLaren assisting. Benzine and half-strength tincture of iodine were applied for skin preparation. Morphine sulphate, one-sixth of a grain, and atropine sulphate one hundred and fiftieth of a grain were given subcutaneously one hour before operation. Under ether an attempt was made to open the jaws with a mouth gag, but proved ineffectual.

The cutaneous cicatrix was excised, and the surrounding skin undermined by sharp dissection for a distance of three centimeters. Stenson's duct was separated from the scar tissue and isolated. The masseter muscle was identified, and with a finger in the mouth as a guide, the scar tissue was severed, and the lower jaw mobilized, care being taken not to incise the buccal mucous membrane and infect the wound. All bleeding points were ligated with iodized catgut number one. The lower jaw could then be opened so that the incisor teeth of both jaws were separated for a distance of four centimeters. A flap of skin ten centimeters long by six centimeters wide, on a pedicle, was dissected from the anterior and outer aspect of the right thigh, and the underlying fat was transplanted between the cut edges of the masseter muscle, to prevent cicatricial contraction, and also beneath the undermined skin, to fill out the right cheek to conform to the contour of the left cheek. These isotransplants were kept moist with warm salt solution. Interrupted subcuticular iodized catgut number one sutures were inserted, with a few horse-hair stitches, in the wound of the face. Silkworm gut sutures were used for the leg wound. Dry sterile dressings were applied.

The lower jaw was opened three times a day subsequently by means of a mouth gag. The wound of the face healed by first intention, and the horse-hair stitches were removed on the sixth day. The patient was discharged from the hospital on the seventh day. The stitches in the leg were removed on the tenth day, there being some necrosis of the upper edges of the leg wound, which healed ten days later. The patient then could eat a regular diet; the contour of the right cheek was normal, with a linear scar level with the skin. Sensory as well as motor nerve involvement was impaired as before operation.

The boy was seen again in December, and had been doing his regular work, having an excellent functional as well as cosmetic result.

A CASE SHOWING APPARENT PARADOXICAL RESPIRATORY ARRHYTHMIA OF THE HEART.

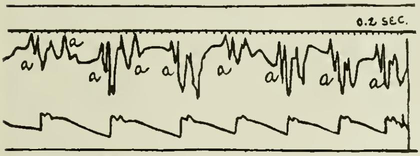
By Paul D. White, M.D., Boston,

Massachusetts General Hospital.

Case: W. J. S., 23 years old. Private of Engineers. In Base Hospital No. 6, A. E. F., November 10, 1918, with influenza. Past history: Very severe "double pneumonia" at the age of five, since which time his pulse has always been slow. Patient says that pulse always gets slower on excitement or on exertion—this has been noted for years. Typhoid fever five years ago. Examination shows patient convalescing from influenza. Heart not remarkable in size or sounds, but rate slow.

The following table shows the auriculo-ventricular rates under different circumstances, as determined by polygrams taken with the Jaquet polygraph:—

	Auricular Rate	Ventricular Rate
Quiet in bed	43	43
Quiet in bed (later) ..	40	40
During deep inspiration	70	35
Deep expiration	41	41
Immediately after moderate exertion	72	36



Polygram of W. J. S., Dec. 7, 1918, explaining the apparently paradoxical respiratory arrhythmia of the heart. Jugular pulse tracing above, radial pulse tracing below. Full inspiration at the beginning.

Note that with inspiration the auricular rate (a-a-a) is more rapid and is attended by two to one auriculo-ventricular heart block resulting in a slow ventricular action.

Time marker, 0.2 sec.

DISCUSSION.

Ordinarily one finds an increase in heart rate with inspiration and exercise. In this instance we find a decrease in heart rate with inspiration and exercise. This paradoxical condition is due to the occurrence of 2-to-1 heart block when the auricular rate rises above a certain point (See figure). Evidently the auriculo-ventricular junctional tissue is depressed, probably by disease in early childhood, so that beyond a certain point it fails to transmit every other auricular impulse.

Actually, the pacemaker of the heart does respond normally to respiratory influence and exertion, but the block produces this unusual finding of slowing during inspiration and exertion. During the slow rate the auriculo-ventricular conduction time as determined by the polygraph is normal. Another point of interest in this case is the slow rate of the pacemaker under ordinary circumstances.

Volhard[1] writing on "heart-block" in 1909 described one case (Case 9) in which there was a somewhat similar paradoxical cardiac response to change in position. The patient lying flat had a pulse rate of 64 and no block; sitting up he had a pulse rate of 42 with a 2-to-1 block, his auricular rate actually being 84; on standing the pulse rate dropped to about 22 and became irregular, due to varying degrees of block from 2-to-1 to 5-to-1. Atropin in Volhard's case did not affect the dissociation except to increase it slightly, due to the increase in rate of the auricles and the inability of the ventricles to keep pace.

Lutembacher[2] in 1919 described a case of "Orthostatic Bradycardia" due to "intermittence of conduction of the bundle of His." His case with an auricular rate of 60 showed no block, at 70 to 80 a 2-to-1 heart-block appeared, and with higher auricular rates 3-to-1 and even 4-to-1 heart-block was found. Thus there was an apparent paradoxical response to exercise here also. Atropin produced the same effect—ventricular slowing—as in Volhard's case.

SUMMARY.

A case is reported showing a decrease in ventricular pulse rate with inspiration and exercise instead of the normal increase. The apparent paradox is due to the production of heart-block by increase of auricular rate plus depressed auriculo-ventricular conduction.

REFERENCES.

[1] Volhard, F.: Deutsch. Arch. f. klin. Med., 1909, xcvii, 348
[2] Lutembacher, R.: Arch. d. Mal. d. Coeur, 1919, xii, 145.

Society Report.

PROCEEDINGS OF THE NEW ENGLAND BRANCH OF THE AMERICAN UROLOGICAL ASSOCIATION.

A meeting was held at the Harvard Club of Boston on Tuesday evening, November 4, 1919, Dr. O'Neil presiding. Dr. E. G. Crabtree and

Dr. E. L. Sanders, of Boston, were elected to membership.

There being no regular paper on the program, the meeting was at once thrown open for presentation of reports of cases and for discussion. A verbatim report of the meeting follows:

Dr. Cunningham: I have this evening, through the kindness of one of my patients, the privilege of showing a man who had a carcinoma of the bladder in an unusual form, and I am pleased to say, that although the operation was performed over six years ago, he is still with us.

This gentleman, then sixty-two years old, was referred to me on October 7, 1913, with haematuria. A cystoscopic examination showed a large sessile growth with all the characteristics of carcinoma, situated just above the right ureteral orifice, the circumference being about that of a half dollar. Scattered over the remainder of the bladder were innumerable small carcinomatous areas varying in size from ½ to 1½ cm. in diameter. It was felt that nothing short of a total removal of the bladder would eliminate the disease, the bladder wall being so thoroughly studded with growth. The patient refused to have this done, and I resected about one-third of the bladder, removing the primary growth by an extraperitoneal operation. In order to, as far as possible, destroy the carcinoma which was studded over the remaining portion, I seared the surface everywhere most thoroughly with solder irons. As the vesical surface of the prostate was also the site of these small areas of carcinoma, the prostate was removed, and the capsule seared with a solder iron from within. The cut edges of the bladder were brought together by suture, and the ureters did not have to be transplanted. A large opening was left at the summit of the bladder, and a tube and gauze placed within it. Sloughs, some the size of one's hand, came away, and the bladder healed in six weeks.

Following the healing the bladder would hold but about two ounces, and there was incontinence of urine. Through this patient's ingenuity, an idea which I had to make a contrivance which might be applied to the penis to retain urine in the bladder when the sphincteric control was lost, resulted in the incontinence clamp, with which you are familiar and which takes the place of a rubber bag. This gentleman has worn this clamp for five years with complete continence, and the bladder has been gradually dilated by its use so that it now holds seven ounces. He still has a low-grade cystitis, but a cystoscopic examination within the last week reveals no evidence of carcinoma. The patient has not lost weight, and his weight at present is 159 pounds, and he is free from symptoms.

Cases Illustrating the Results of Operation for Tuberculosis of the Male Genital Tract.

By W. C. Quinby, M.D., Boston.

I wish to show you tonight two male patients who have had tuberculosis of the genital tract. You may recall that in the spring of 1918 I reported a small series of such cases to the meeting of the American Medical Association in Chicago. In that article I advocated a complete removal of the genital tract on one side at least, as the surgical treatment of tuberculosis in this region. My endeavor has been to prevent further involvement of the other epididymis by a more extensive removal than was usually employed. At that time I reported the results of eight patients so treated, and to-night I can show you, in the first place, a patient who was one of the previous list. His case is illustrative of all the others in that he has been free from recurrence since his operation. A brief summary of this first patient's career is as follows:

He was first seen at the age of twenty-five, in December, 1916. There was no evidence of tuberculosis of the lungs, but there was definite tubercular involvement of the right epididymis. There was no pathology to be found on rectal examination, and the urine was normal. On the nineteenth of December, the vesicle, vas, and epididymis were removed. He made an easy convalescence, but two months later a small sinus appeared in the perineum which discharged a few drops of pus intermittently. This was closed by the aid of tuberculin in five months Since this his health has been absolutely normal. He is at least fifteen pounds heavier than when operated on, and, as you can see, is enjoying normal health.

The second patient is the most recent case of this disease which I have treated by the above outlined method. He is a Greek thirty-five years old, who has lived in the United States for the past five years. About four years ago he suffered from an abscess near the anus which was opened by operation on two occasions, and which subsequently healed. He was admitted to the Brigham Hospital on August 11, 1919.

Four months ago he had a severe cold with infection of the middle ear, so that the drum had to be punctured. About three months ago, swelling and tenderness were noted in the right testicle. This has persisted, the organ gradually increasing in size. It is not as tender now as formally. Recently there has been some frequency of urination, but the patient states that, during this time, he has been drinking a very great deal of water. Examination showed a questionable area of tuberculosis in the right chest, but the x-ray examination was negative.

The globus minor of the left epididymis was definitely enlarged; firm, nodular, and slightly tender. Deep fluctuation was felt.

On rectal examination two old scars were seen on the surface of the left buttock near the midline. The prostate was of normal size, but somewhat boggy in consistency. The median groove was clearly defined. There were one or two small, firm nodules along the right lateral border of the gland. It showed no unusual tenderness. Neither vesicle was palpable. The urine contained an occasional leucocyte; otherwise it was negative. On the fifteenth of August, 1919, each vesicle, left vas, and epididymis, together with a portion of the prostate, were removed. Convalescence was without untoward event, the patient leaving the hospital with the wound entirely healed on the sixteenth day after operation. As you see him to-night, he has gained from six to ten pounds, and is in normal health.

Pathologist's report: Specimen consists of right and left seminal vesicles, two pieces of prostate, 1 x .5 cm. and 1 x .5 x .5 cm. and the left epididymis, and vas deferens. The right seminal vesicle is of normal size, moderately congested, and shows on section a dilated lumen filled with brown albuminous fluid. The walls are thin and show no lesions. The left vesicle is slightly enlarged, light colored, and firm. Section shows the lumen filled in most places with a yellowish-white, caseous, necrotic material. The walls are also involved in similar manner, and about equally throughout the vesicle. The prostate on section shows numerous yellowish-white nodules of caseous consistency. The epididymis is moderately enlarged, and on section shows a large necrotic area in the lower pole, one cm. in diameter, and numerous other necrotic nodules in which there is a yellow, caseous material. The vas measures twenty cm. in length, is of normal thickness and appearance, except in the distal portion where it is thickened and shows on section yellowish-white, necrotic areas in the lumen and wall. This process extends about two cm. from the extremity.

Microscopic report: Sections of the prostate show many areas of necrosis, roughly circular in outline, many having become contiguous so as to form large areas. These areas are surrounded by a small amount of fibrous tissue and epithelioid cells with a few mononuclears. Many giant cells are seen. The glands are about normal in size, some slightly enlarged. The smooth muscle has undergone some hyalin changes, and the amount of fibrous tissue is definitely increased. Two sections of the vas show no tuberculosis. A third and longitudinal section shows small typical tubercles. Section of the epididymis shows extensive necrosis and tubercle formation.

Diagnosis: Tuberculosis of the prostate, vesicle, epididymis, and vas deferens.

These two cases illustrate again the point which I attempted to emphasize in my earlier communication that, thus far, in every instance where tuberculosis is found in the epididymis it also exists at a more central portion of the genital tract, although this may not be revealed on rectal palpation. Thus far, since I have been interested in this point, I have not been able to find any instance of infection of the epididymis, either judged from the operation material or from autopsy examinations, where this condition failed to be present. In this connection I quote in brief the career of a recent patient at the Peter Bent Brigham Hospital, under the care of Doctor Harvey Cushing.

This patient was twenty-seven years old when he entered the hospital in July, 1919. In September, 1918, while in the army, he developed tuberculosis of the left testicle, for which this organ was removed. Repeated examinations of his chest, made after this, failed to show any involvement of the lungs, so that he was discharged from the army as being well.

Three months before entering the hospital, he began to have dizzy attacks on rising in the morning, and stiffness in the neck. This became slightly worse, and vomiting appeared. Most recently there was difficulty in walking, and unsteadiness of one hand. A diagnosis of solitary tubercle (tuberculoma) of the left cerebellum was made, and on the first of August operation was performed. This was followed about two months later by death from tuberculous meningitis, and on autopsy the genital tract on the side where orchidectomy had been performed was found to be the seat of tuberculosis which, to a moderate degree, involved the prostate as well.

Dr. Chute: It seems to me that this contribution of Dr. Quinby's is a very important one. When I heard Dr. Quinby's paper in Chicago in 1918, I felt that it gave definite form to something that many of us had long suspected. It seems to me to offer what I should consider definite proof that tuberculosis of the epididymis is a secondary process. The fact that the second side becomes involved so frequently, even when the first epididymis has been excised early, has seemed to me to disprove the hypothesis that the epididymitis was the primary tuberculous lesion of the genital tract. I believe that the progression in tuberculous lesions of the epididymis is like the gonorrheal and colon infections of the epididymis—from the vesicles and prostate to the epididymis. I feel that we are greatly indebted to Dr. Quinby for illustrating so clearly the point that so many of us have long believed was true but have been unable to definitely demonstrate.

Dr. Cunningham: The subject of tuberculosis of the genital tract interests me very much. I do not know as I understand Dr. Quinby in his statement "that tuberculosis was primary in the epididymis in one of his patients." If this is so, it is certainly most unusual, and while this is frequently the clinical observation, there is much evidence which leads to the belief that there are always associated lesions of tuberculosis in the prostate and seminal vesicle on the side with that of the diseased epididymis, which lesions, however, are not always demonstrable by clinical methods of examination.

Some years ago I collected a large amount of material at autopsy, which showed that there was always a focus of tuberculosis somewhere in the body, other than that in the genital tract, and through which focus it was believed that the genital tract was secondarily infected. Clinically, the first evidence of tuberculosis in the genital tract is usually discovered in the epididymis, but in my post mortem study there were no instances in which we failed to find associated tuberculosis in the other organs of the genital system, in the seminal vesicle and prostate. So that I believe that although tuberculosis is first discovered clinically in the epididymis, we should feel convinced that similar disease exists in the seminal vesicle of the same size, and also in the prostate.

In regard to the treatment of tubercular epididymitis these facts should not be overlooked, and while the removal of the diseased epididymis by epididymectomy or an orchidectomy removes all the tubercular disease which may be demonstrated, it is sufficiently proven, I believe, that there remain other foci of the same disease in the vesicle and prostate. I believe that the removal of the prostate and vesicles, together with the epididymis or testicle, is an operation of considerable magnitude, often attended by an unnecessarily high mortality, and the deep structures of the perineum are likely to become infected with the disease during such an operation, and those who can perform this operation without these distressing features, possess an ability to which I can lay no claim.

Realizing the desirability of destroying the foci of tuberculosis remaining in the seminal vesicle and prostate, following the elimination of the disease in the scrotum I, several years ago, adopted the plan of attempting to destroy such lesions in a manner similar to that employed in treating the tuberculous ureter following nephrectomy, for this disease. The procedure consists in injecting carbolic acid in the ureter, following the removal of the disease in the scrotum. I wrote a paper on this subject, which was presented to this society in St. Louis, but which I was unable to read. I understand, however, that it met with little approval on the part of the Society. I wish to state, however, that this form of treatment in my experience has been far more satisfactory in its results than trying to remove the disease by total extirpation in a surgical manner.

Within the past few days I have seen a patient on whom I performed this operation on both sides, following a castration for advanced disease in the scrotum eight years ago. This patient presented himself with a tubercular pleurisy, but there was no evidence of disease in the genital structures. He is an example of many patients that I know of, treated in this manner, who are still living at a period of over five years following the operation.

I feel that tuberculin is of much value following these operations, and I make it routine to follow any surgical procedure carried out for the removal of a tuberculous organ by a period of treatment with tuberculin for at least one year. The results on the whole have been most satisfactory, in fact the treatment as just outlined has proven by far the most satisfactory method of dealing with the situation.

Dr. G. G. Smith: I think this is a very interesting subject, one about which the last word has not yet been said. I have agreed with each of the three speakers in some points and have disagreed in others. In my experience I cannot say that castration and prostatectomy become necessary. After an epididymis is removed the worst that happens is that the other epididymis becomes infected and that second epididymis can then be removed; the whole process will then tend to quiet down. This is my experience in the method I have followed for a number of years. It seems to me that the situation is similar to that met with in nephrectomy; after the kidney has been removed and the ureter put at rest by stopping the flow of urine through it, the ureter becomes sclerosed and the tuberculous process is arrested. Rest is the best treatment for tuberculosis and if these structures can be put at rest the tuberculous infection will quiet down. I think tuberculin is of great value in these cases—I cannot agree with all that Dr. Cunningham has said about castration. I have operated upon some cases where the epididymes were plastered over the testicles in such a way as to make it appear that the testes were involved. After the epididymes were dissected off the testes, the latter were put back into the scrotum in apparently normal condition. We have followed these cases for a long time and none, so far as I know, have resulted in secondary sinuses after epididymectomy. I still feel from my experience that epididymectomy on the infected side and later, if necessary, epididymectomy on the second side, aided by hygienic treatment and tuberculin, will bring about a cessation of the process in the prostate and vesicles.

Dr. Crosbie: I have been very much interested in the past few years in what Dr. Quinby has said regarding tuberculosis of the epididymes and I am inclined to feel that he is absolutely right; if you are going to do anything in an operative way take out the whole condition; personally, I have never treated such cases by operation. As a matter of fact, I believe that if most people are let alone and treated in a hygienic way the tuberculosis will gradually die out. I generally make sure that a man follows a line of work that keeps him out of doors a great deal. Two cases that I recall that had the epididymes removed, developed miliary tuberculosis following this method and whether or not it was due to the removal of the epididymes, I don't know, but in the cases at the clinic that I have followed those that have had nothing done in an operative way have gone on very well.

Dr. Hoye: About three weeks ago two cases were referred to me at the Rhode Island Hospital. In the first case the man had an epididymis that was tuberculous and as Dr. Smith described this, it was plastered on one side. I excised the epididymis. There is now a small granulating area in the scrotal wound and the man seems to be very much improved. He is to be followed by the social service system and they will undoubtedly watch him closely.

The second case was a man seen for inguinal hernia on the left side, but on examination I found a very large epididymis. I obtained no venereal history but the man told me that two years before he had consulted Dr. Phelps of Worcester for frequency of urination. Cystoscopic examination at that time showed the right kidney to be tuberculous after the usual test of injecting urine into a guinea pig. Operation was strongly advised at that time but the man would not consent. He was to go to the Massachusetts General Hospital but did not. He was apparently doing well until hernia appeared. Had no thought about the epididymis. I wrote to Dr. Phelps about the case, and he told me the story. The patient then went back to Worcester, and Dr. Phelps can tell you about him.

Dr. Phelps: The patient, referred to by Dr Hoye, is now on the firing line. I have cystoscoped him. His bladder seems to me to be in better condition than two years ago, but he has an epididymis which we believe to be tuberculous. Two years ago the guinea pig was autopsied. It had died of tuberculosis. At that time there were no other symptoms in scrotum or elsewhere. The boy did not take kindly to operation at that time. He lived in Providence so he went home to consult his people. He came back to me, saying that he had found a man in Providence who was going to cure him without operation. I wrote to the man at one time but did not hear from him. Dr. Hoye then called me up concerning the patient, and he is now being further investigated.

Dr. O. R. T. L'Esperance: There are certain symptoms that help to make the diagnosis of tuberculosis of the epididymes nearly definite but not positive.

I recall at this time two patients on whom the pre-operative diagnosis of tuberculosis of the epididymes was confirmed by three urologists and the pathological examination of specimens obtained at the time of operation changed the diagnosis to that of gumma of the epididymes.

It must be borne in mind that tuberculosis and gumma of the epididymes present for examination symptoms much alike, so that a Wassermann test, investigation and study of upper urinary tract and physical examination of the lungs are necessary to complete the differential diagnosis.

I believe that operation for the removal of the tuberculous epididymes, in many cases is not a necessity, but when sinuses and broken down masses are present, an operation is desirable for the comfort of the patient.

Tuberculin, I am convinced, has been of some benefit to those patients receiving enough of it.

Dr. Cunningham: I don't want to talk all the time, but Dr. Smith has brought up a very important matter which is "whether or not one should do an epididymectomy or castration." It seems to me that the former procedure is satisfactory when the disease is not advanced, yet one should not hesitate, in my opinion, to do a castration if there is any doubt about the ability to remove all the disease. I see no advantage in an epididymectomy over an orchidectomy except for cosmetic reasons, and I would like to have him tell me why he feels that one should take any chance in saving a testicle, which will not be a functionating organ.

Another point which I failed to speak of is in regard to investigating the upper urinary tract in those cases that have tuberculosis in the genitals. I have had several patients proven to have tuberculous kidneys associated with tuberculosis of the genital tract, and I personally have come to the conclusion that if a patient has tuberculosis of the genital tract one has not done his duty until an investigation of the bladder and kidneys has been made to determine whether or not the patient has a tuberculous kidney. These two conditions are, I believe, more frequently associated than is generally believed.

Dr. Smith: I agree entirely with Dr. Cunningham that you do often find tuberculosis of the kidney and not infrequently on the same side as the tuberculous epididymis. I have felt without any definite proof that tuberculosis may extend from the vesicles and prostate to the kidneys.

In regard to the reason for doing an orchidectomy I am afraid that Dr. Cunningham is laying some sort of trap for me. My answer has to do with the value of the testis: Dr. Cunningham knows perfectly well that it has two functions; one is the manufacturing of the sexual cells and one is the manufacturing of internal secretion by the cells in the interstitial tissue. It is a known fact that bilateral cryporchids are potent although usually sterile, thus differing from males castrated early in life, who are impotent as well as sterile. I believe that the testicle, even though deprived of the epididymis, is extremely valuable as an organ of internal secretion. This is the real reason for leaving the testicle at the time of operation. If you remove at one time a testicle for tuberculosis of the epididymis and later the other epididymis becomes involved and you remove the second testicle, the individual is castrated entirely. I think it very much better, from every point of view, if the testicles are left.

DR. CUNNINGHAM: I do not want to lay any trap, as Dr. Smith suggests. I feel this is a subject that can be discussed at great length, yet the question seems to be "whether or not the internal secretion of the testicle really amounts to anything." I have a good many patients who have been castrated for one reason or another and, so far as I can see, they are not changed in any way. That interests me inasmuch as I have been unable to see any difference in these individuals as a result of losing the testicles, and I have often wondered if the idea regarding it, as expressed in most textbooks about the internal secretion of the organs, is really the truth.

DR. YOUNG: I want to say just a word on this question to back up Dr. Cunningham's remark. I think that at the time we operate the loss of internal secretion of the testicle is generally of less importance than the question of whether or not the patient will return for further treatment in case there is a recurrence of trouble on the other side, as often happens regardless of whether a castration or simple epididymectomy is done. Until we have more proof that the more radical operation is justified, I think that we have either got to do one of these two or nothing; so that by doing an epididymectomy, if there is return on the second side the patient is more certain to come back to us for treatment of the second focus of infection.

DR. QUINBY: In answer to one or two of the points raised by those gentlemen who have been kind enough to discuss the question of tuberculosis of the male genitalia, I would like to recall to your attention general facts that are well known, which have governed me in my opinion regarding this disease. These facts are that the treatment of tuberculosis by surgery must vary according to the portion of the body involved: because tuberculosis has a different life history and different pathological course, according to its location. Dr. Smith is quite right when he speaks of putting a structure at rest, but this is not always possible. We know very well that tuberculosis of the ascending colon is fatal if not resected. We know that no pathologist has ever succeeded in demonstrating a healed renal tuberculosis. It is not possible to put the prostate at rest by any method that I know of, and for this reason I fail to see how Dr. Smith feels that simple epididymectomy puts the vas, prostate, and vesicles at rest. In my opinion it does not. It may put the conducting structures, such as vas and vesicles at rest, but not the prostate. Further, this may be a matter of personal temperament. I don't like the feeling of waiting until the other testicle becomes involved. If one is certain that the other side will later become involved in a large percentage of cases, then extensive excision appeals to me much more than waiting to see what happens. Statistics which I believe to be accurate ones, show very definitely that in at least fifty per cent. of the cases treated by simple epididymectomy the other epididymis later becomes involved. I prefer either to do my best to get out as much of the tuberculosis as possible or to adopt Dr. Crosbie's policy of looking after the general health of the patient and not employ surgery at all.

A question that has been asked me is about sinuses. There have been one or two in the earlier cases that I reported in my first paper. They appeared about two or three months after operation and lasted about six months. They were of no real consequence, certainly no worse than sinuses after the removal of glands of the neck.

Yesterday I saw a physician whose case illustrated this problem most interestingly. Four years ago he had tuberculosis of the epididymis. He was then in Chicago; he went to Rochester, where Dr. Judd removed the epididymis. Then he went to Florida where he spent the following winter. He did not work for the next two years, when he found that he had tuberculosis of a kidney. He went back to Rochester for nephrectomy. During the past two years he has been resting up from the two operations, although he has tried occasionally to go back to work. By work he means riding occasionally in automobiles and also conducting nose and throat practice. He still complains of lassitude, is always tired, and often has night sweats. He came to see me to know my feeling about the future. I asked him what investigation had been made of the genital tract higher than the epididymes. He said none. Examination showed a very large vesicle on the side above the epididymectomy, possibly three times the normal size, and it was much more tender than normal. I advised him to go back again and try work to see what would happen. If he finds after one or two trials that he is unable to lead a life of comfort, then I advised having more tuberculosis taken out. In other words, to have the left vesicle and possibly a portion of the prostate taken out. My feeling is that he still has more tuberculosis in the body than his antituberculosis equivalent can conquer. Most individuals are able to resist a certain amount of tuberculosis, but this is greater for some than for others. In this man we see an unusually low power of resistance. Therefore, if we relieve him of all the tuberculosis which can be removed by surgery, it will be the easier for his resistive powers to cope with what must necessarily remain.

(To be continued.)

Book Review.

Diseases of the Nervous System: A text-book of Neurology and Psychiatry. By Smith Ely Jelliffe, M.D., Ph.D., and William A. White, M.D. Philadelphia and New York: Lea & Febiger. 1919.

The fact that a third edition of this book should have been necessary within four years is proof of its great value in American neurology and psychiatry. The present third edition has been remodelled and largely rewritten and it furnishes the most complete text book on nervous and mental diseases available in English for the student and general practitioner. Even the specialist will find it a valuable work of reference as all the recent developments are carefully and accurately summarized, particularly in the newer fields of vegetative neurology, the endocrinopathies and the data furnished by the Great War in the field of sensorimotor neurology. Here in one volume is admirably compressed the whole of neurology, psychiatry, psychopathology, and psychoanalysis. It is a pleasure to read a text book that departs from the conventional arrangement and discussion, as the descriptions given, particularly of the neuroses and psychoses, are interpretive rather than mere classification, and insistence is placed on the nervous and mental mechanisms involved in disease processes rather than the artificial grouping of diseases and symptom complexes.

In the methods of examination, stress is laid upon Adler's epoch-making contributions of concept of organ inferiority as factors in heredity and in the etiology of certain nervous disorders and the authors are to be congratulated in making the valuable work of Adler familiar to American physicians, as his theories explain so much of what was formerly vague and inexplicable. The systematic scheme for the examination of the reactions of the vegetative nervous system and polyglandular interactions, is of practical importance. It is definitely pointed out that in the syndromes of the vegetative nervous system there are trends rather than fixed types and that consequently considerable overlapping may occur in the interpretation of symptoms. The attitude taken towards the so-called "intelligence tests" is perfectly sound—that is, that the intellect is after all only a superficial guide to conduct, and that human motives are emotional, their origin often lying deeply buried in the unconscious. The human mind is too complex a mechanism to be compressed into an artificial scheme devised by a laboratory psychologist. The section on psychoanalysis is brief, yet it accurately describes the method and purpose of psychoanalytic therapeutics.

It seems unfortunate in so excellent a book that stammering as a psychoneurosis is barely mentioned. The amount of space devoted to sexual inversions and their treatment by psychoanalysis is much too inadequate, when it is considered that psychoanalysis offers the only hope of cure in these distressing conditions. The section on the peripheral nerve injury syndromes and the studies of nerve fasciculation in end to end anastomoses, shows how well the authors have kept abreast of the times with the data on peripheral neurology which have accumulated during the recent World War.

The chapter on neurosyphilis is especially complete and the insistence on the changes in the pupillary light reflex under methods of careful testing is one that ought to be familiar to all physicians. It is interesting to read how the authors have accepted the theory that the tertiary and so-called parasyphilitic manifestations are really reactions of a hypersensitized nerve tissue (hyperallergie) leading to the parenchymatous types of neurosyphilis, particularly general paresis.

The section on psychiatry and the neuroses and psychoneuroses, comprising over two hundred pages, is especially to be recommended. It departs from the traditional descriptive treatment, although the classification of Kraepelin is followed in the main, and lays insistence on the interpretation of symptoms, showing how psychoanalysis has proved that psychotic and neurotic manifestations are not due to chance, but are the logical outcome of mental conflicts and of the personality make-up and are motivated by strong unconscious factors. It is the twentieth century psychiatry of mechanisms and not the nineteenth century psychiatry of mere classification. It is refreshing to read the psychoanalytic treatment of the neuroses, as a more advanced reaction from such pernicious methods as drug administration, persuasion, the rest cure, etc.

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NEXT MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

The House of Delegates of the American Medical Association has accepted the invitation given by the Massachusetts Medical Society and seconded by the Suffolk District Medical Society to meet in Boston in 1921. The last meeting of the Association in this city was in 1906.

Upon the testimony of men from different parts of the country it would appear that the meeting in Boston in 1906 was very much appreciated. Indeed, the capital of Massachusetts offers a good many inducements. To those people who live away from the salt water, there is the sea; to those who come from more recently settled parts, there are the rich historical associations in New England. In 1921 there will be those permanent memorials to the Pilgrim Fathers which will result from this year's tercentenary celebration.

The advantages pertaining more strictly to medical conventions are worth considering. The Harvard Medical School offers much room for section meetings. The hospitals, although not so numerous as in New York and Chicago, are well established in reputation. Hotel accommodations will, of course, be strained, but by the utilization of rooms in the suburbs, it is probable that all visitors can be cared for.

The problem of arranging for so large a meeting as that of the American Medical Association is not slight. Many men must spend many hours and, incidentally, many dollars, in preparation. There can be no doubt, however, that the thing is worth while. To achieve a successful meeting, from which everyone departs with a bag full of scientific plunder and a recollection of a good time, is in itself worth doing. That state of mind resulting from a feeling of hospitality blended with a desire to do well whatever must be done will supply the motive power for our labors. Boston and New England will look forward to 1921.

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FORSYTH DENTAL INFIRMARY FOR CHILDREN.

Both to the rising generation of children in Boston and its vicinity and to the dental profession the Forsyth Dental Infirmary is of inestimable value. It gives to children necessary treatment, and instruction not only in oral hygiene but in general hygiene as well, thereby improving their nutrition and their physical and mental growth and lessening their liability to contract disease. From the point of view of the dental profession, the institution is of great value, not only because of its research department but also for its clinical branches, inasmuch as it gives to dentists an opportunity hitherto seldom afforded them—that of observing the methods and practice of their colleagues.

The Forsyth Dental Infirmary was founded by John Hamilton and Thomas Alexander Forsyth in memory of their brothers, James Bennett and George Henry Forsyth. It was incorporated in 1910 by a special act of the Massachusetts Legislature. The fifth annual report describes the purpose and achievement of the institution. The Infirmary aims not only to repair and extract carious teeth, correct oral deformities and treat adenoids and tonsils, but also to institute measures among school children for the prevention of disease. It has been the policy of the institution to develop the work on so high a plane of technical perfection that it should stand in the same relation to the dental profession that the hospital bears to the medical profession.

All children up to the age of sixteen are eligible for treatment at the Forsyth Dental Infirmary, regardless of race, creed, or color, provided that their families are financially unable to obtain the service of a private dentist. The children are sent to the Infirmary by public and parochial schools, social centers, institutions, physicians and dentists, and also directly by parents. The work of the dental clinic is conducted along the lines of modern preventive dentistry, much attention being given to prophylactic treatment, cauterization of minute cavities, and minor fillings, rather than to the devitalizing of teeth and the treatment of root canals. Every sort of modern apparatus is available for the use of the operators, and asepsis is maintained to an extent never heretofore thought possible in the use and care of dental instruments. Children go to the Infirmary usually in groups of from six to twelve, in charge of a school nurse or of some other adult. For certain kinds of treatment it has been found practicable for groups as large as forty-four to attend the clinics at one time. In this way, all the extracting, for instance, necessary for an entire school can be completed in a very short time. The number of individual cases treated in the clinics during the past year has been slightly lower than last year; the number of dismissals, however, a more accurate measure of the work accomplished, has been increased by over a thousand. There have been many more third grade children and fewer initial cases from older grades admitted than in previous years. Examination of older children who have been given treatment, tooth brush drills and instruction during previous years has shown that in the majority of cases the benefit has been permanent. The results achieved by the Forsyth Dental Infirmary will have a far reaching effect upon the health of the rising generation of Boston children.

SERVICE OF THE NATIONAL COMMITTEE FOR THE PREVENTION OF BLINDNESS.

DURING the five years of its existence, the work of the National Committee for the Prevention of Blindness has steadily increased and merited the growing appreciation of the public. This organization seeks to prevent blindness due to ophthalmia neonatorum, accidents, and diseases, and to conserve vision by every possible means. Beginning with 65 charter members, there are now enrolled, at the end of five years, 2,280 members and donors, including workers in many fields of service to mankind and representing every state in the Union except one, the Philippines, and several foreign countries. Since 1915 the Committee has been successful in initiating and supporting movements for the passage of laws for the conservation of vision, until such laws have been enacted, or existing laws improved by amendment, in eighteen states. Statistics wherever available have shown a reduction in the number of persons becoming blind from preventable diseases since the organization of the Committee; the reduction has been particularly marked in the case of ophthalmia neonatorum. Financially, the organization has been established on a firm national basis. The first work was made possible by the Russell Sage Foundation and the Rockefeller Foundation; resources have increased and the work has been extended to such a degree that the expenditure has been increased from twelve thousand dollars during the first nine months to twenty-two thousand during the past year.

What has been accomplished by the Committee during 1919 has been recorded in the fifth annual report. A subject of special study was the conservation of vision classes in schools. In England, a number of years ago, classes were organized for myopes, and the results proved to be so valuable that a like service has been undertaken in this country, first by Ohio, Massachusetts, and New York. The Committee for the Prevention of Blindness undertook the nationalization of this movement in America. Of the causes of blindness, ophthalmia neonatorum continues to be one of the most serious. Statistics received from forty-four schools and day classes for the blind show that one hundred and 5 of the six hundred and twenty-two pupils newly admitted are obliged to live the lives of the blind because of this infant scourge. The percentage is 16.9, an increase over last year's report of 2.2%. Blindness due to wood alcohol poisoning has increased greatly. Trachoma appears to be coming more and more thoroughly under control. Eye accidents are fewer than formerly, a fact which is due in all probability to the continual effort to educate men in industrial occupations and to the application of the workmen's compensation regulations. The follow-up work by special social service nurses in cases of eye troubles has proved to be of considerable value, inasmuch as many people, through ignorance or carelessness, neglect instructions or fail to keep in touch regularly with hospital clinics, and suffer in consequence deterioration or destruction of vision.

The Committee has considered of prime importance the necessity of interesting the children themselves in the care of their eyes. Considerable time and effort has been expended during the past year in bringing young people, by means of stories, talks, lectures, slides, and moving pictures, to a realization of what good vision means. The Committee believes that if the vision of the rising generation is to be conserved, educational systems must include an examination, by an eye specialist, of every child at the time he enters school, and as far as possible once a year thereafter during his school life. For those children who cannot use the ordinary school equipment without expense of their sight and their general health, special classes with adequate equipment should be organized. In the city of New York there are twenty of these classes; in Cleveland, nine; in Boston, Cincinnati, and Milwaukee, five. Other cities have recognized the need and have formed one or two classes; but although the list is encouraging it is short and limited in area compared with the number of children needing such benefit. In order to assist local centers in the establishment of these special classes, a study has been made by the Committee and outlined in a manual of the methods and equipment used in classes already in existence in this country and in England. The National Committee for the Prevention of Blindness deserves public recognition and support in its attempt to extend by every possible means measures to prevent blindness among people in this country and in foreign lands.

MEDICAL NOTES.

American Memorial Hospital at Rheims. Ground has been broken for the construction of the American Memorial Hospital at Rheims. This will be the first permanent structure of importance erected in devastated France, and has been made possible by the donations of more than sixty thousand friends of France across the Atlantic. The hospital will represent approximately one million dollars, and will be erected in a sixteen-acre park, the gift of the city of Rheims. It will be used chiefly for women and children. The hospital designs were made by Charles Butler, a New York architect. More than a quarter of a million has been raised by the American fund for the French wounded for its construction. The hospital will have one hundred and fifty beds permanently endowed to the amount of $60,000, the fund having been raised by a committee of the American Memorial Hospital. The fund is invested under the supervision of a United States Trust Company, the revenues to be paid to the board of control of the hospital. Over each bed will be placed a tablet showing that it is endowed in the name of an American son or relative who fell on the battlefield in France. One tablet will bear the inscription, "In gratitude for the return of my boy."

A fund was raised in New York for an endowment in memory of Theodore Roosevelt; another endowment is in memory of James Stillman. Other endowments have been contributed from St. Paul, Kenosha, Wisconsin, Chicago, St. Louis, several cities in Kansas, Washington, D. C.; Pittsburgh, Wilmington, Delaware; Detroit, Grand Rapids, and San Francisco. Three beds have been endowed in New York by people who could give small subscriptions but not large sums; most of these contributions represent the cost of the endowment of a bed for a day or a week, these relatively small sums making up a total of $18,000. The $6,000 fund contributed by San Francisco is made up of contributions of pennies and five cent pieces by the school children and the Junior Red Cross of that city.

The hospital will have a clinic for the civilian population of the Cathedral City, a modern American equipment for the maternity and children's wards, and a dental clinic and dispensary. It is expected that it will take about a year to complete the structure, which will be three stories high and of stone. There will be sun parlors and gardens and special arrangements for the treatment of children suffering from the effects of malnutrition during the war.

American Hospital in London.—Plans are being made for the organization of an American hospital in London, for the purpose of advancing medical science and research by the British and American profession. Within a short time the hospital will be incorporated in the United States and a campaign will be undertaken to raise an endowment fund of several million dollars. The presidency of the institution in America has been accepted by Mr. William H. Taft, and the British president is to be Lord Reading. For many years it has been felt that there was need of an American Hospital in England. There have long been German, French, and Italian institutions in that country. The proposed American medical institution will be designed not only for the benefit of American and other patients, but also for the advantage of American medical students in post-graduate work. The purpose and plans of the hospital have been outlined as follows by Lord Reading in a letter to Mr. Taft:

"The American Hospital in London has been established for the purpose of affording medical aid, according to modern American and English methods, to men, women, and children, irrespective of nationality or creed, particularly to Americans; also for the extension of facilities for clinical study and research in Europe for American medical men who seek a further and specialized education. In connection with these, it purposes to establish in London an American medical headquarters with laboratories, libraries and other facilities for post-gradnate study, together with accommodation for conferences of those attending with their English colleagues.

The constitution of the hospital, which is about to be incorporated under the law of the District of Columbia, provides that the hospital shall be administered by a board of not exceeding twenty-five governors (of whom three-fourths shall at all times be American citizens elected annually by exclusively American bodies, who have maintained an organized existence in London for at least two years for commercial, philanthropic, educational, and social purposes), and in an advisory capacity by an American lay committee in the United States.

The board of governors at present consists of the following American residents of London: Walter Blackman, George M. Cassatt, Newton Crane, Wilson Cross, James E. Dunning, J. Grant Forbes, Philip Franklin, William Gourley, Clarence Graff, Robert Grant, Jr., James Benson Kennedy, J. Blair MacAfee, George A. Mower, Francis E. Powell, H. Gordon Selfridge, Lawrence L. Tweedy, Frederick C. Van Duzer, and E. Bradner White.

The medical committee in America consists of the following physicians and surgeons: George W. Crile of Cleveland, W. J. Mayo and Charles H. Mayo of Rochester, Albert J. Ochsner of Chicago, Rudolph Matas of New Orleans, and Franklin Martin, Chicago.

The following is the medical committee in Great Britain: Sir Arbuthnot Lane, Sir Humphrey Rolleston, Sir John Bland Sutton, J. Y. W. MacAlister, and Philip Franklin.

The office of the medical committee in America is to render advice and assistance to the board of governors, particularly in recommending American medical men; for the making known to American medical students of the facilities which are offered them by the hospital and the selection of students for post-graduate study. The medical committee in America further is expected at all times to assist the board of governors in all matters pertaining to the interest of the hospital in America.

The board of governors will at all times maintain a general hospital building with the necessary and usual appurtenances for the objects hereinbefore specified, with the wards and out-patient departments and various special facilities of a fully equipped institution of the most modern character, including rooms for the reception and care of paying patients in conformity with the practice of hospitals in the United States; research laboratories, appliances, building or such other space as may be requisite for the accommodation of American medical students who shall visit London to avail themselves of the advantage of the hospital.

Need of Physicians in Rural Districts.—The recent gift of Mrs. Henry R. Rea of the amount of $100,000 to be used for the establishment of twenty scholarships for the benefit of country physicians unable to pay their way through advanced courses of instruction has raised the question as to whether or not gifts of this sort will render even more difficult the solution of the problem of the country doctor. In the discussion of this subject in the *Baltimore Sun*, Dr. J. Whitridge Williams, dean of Johns Hopkins Medical School, is reported to have stated the opinion that no system extending financial aid to medical students or for post-graduate medical study is likely to prove effectual in stopping the drift of competent physicians from the rural districts into the cities. It is obvious that the comparatively small returns to be earned in rural practice will result in serious shortage of country doctors. Dr. Williams has suggested as one method of helping to remedy the situation the establishment of a system of public health centers in the counties, which should pay regular salaries to physicians and nurses in addition to their income from private practice.

Dr. Williams believes that although the general value of such gifts to the medical profession is great, they will have no particular tendency to attract the student to establish his practice in the country, and they will not influence a country doctor to remain there. Nor can the graduate of medical schools, trained at considerable expense, be blamed from turning away from the prospect of a country prac- which promises to yield about $1500 a year. The combined collegiate, medical school, and hospital work of a medical school, requiring about ten years' time, has been computed to cost an average amount of between $10,000 and $15,000. Men who have invested so much of time and money in their careers cannot be expected to work for pay lower than that received by the laborer. The fact that students receive financial aid in paying for medical education does not cause them to minimize its value and hold it in low esteem. It is probable that the expensiveness of education is one of the underlying causes of the threatened shortage of country doctors.

Mrs. Rea's gift was made toward the two million dollar endowment fund of the New York Post-Graduate Hospital School. In the award of the scholarships, the possibilities of public service of each candidate will be considered and the recommendations of State and county medical associations will be given serious consideration. Post-graduate hospital work will be found very helpful to a large number of doctors, both from the country and the city, who may feel the need of a later course to keep them in touch with professional activities.

American Association of Industrial Physicians and Surgeons.—The fifth annual meeting of the American Association of Industrial Physicians and Surgeons was held in New Orleans, La., on April 26 and 27.

Conference of State and Territorial Health Authorities.—The eighteenth annual conference of State and Territorial Health Authorities with the United States Public Health Service will be held in Washington, D. C., May 26 and 27, 1920. As important State and National public health matters will be considered, it is hoped that each state may be represented at the meeting by an official delegate.

BOSTON AND MASSACHUSETTS.

Week's Death Rate in Boston.—During the week ending May 8, 1920, the number of deaths reported was 221 against 221 last year, with a rate of 14.25 against 14.47 last year. There were 43 deaths under one year of age against 30 last year.

The number of cases of principal reportable diseases were: Diphtheria, 26; scarlet fever, 59; measles, 245; whooping cough, 68; typhoid fever, 2; tuberculosis, 57.

Included in the above were the following cases of non-residents: Diphtheria, 6; scarlet fever, 11; tuberculosis, 4.

Total deaths from these diseases were: Diphtheria, 3; scarlet fever, 2; measles, 4; whooping cough, 7; tuberculosis, 17.

Included in the above were the following non-residents: Diphtheria, 1; scarlet fever, 1.

Influenza cases, 9; influenza deaths, 1.

Resolution Passed by the Bristol South District Medical Society at the Annual Meeting, May 6, 1920.—Resolved that the Massachusetts Medical Society, of the South Bristol District, considers the passage by State, or Nation of paternalistic laws as class legislation and an infringement of the rights of individual citizenship.

It further considers as pernicious and unfair and as tending to universal socialism the passage of such laws.

For these reasons and for the further reason that it has at heart the best interests of the Nation and this Commonwealth it opposes strenuously any legislation favoring so-called health insurance, compulsory or voluntary, in all its various forms, including the Maternity Bill now before the Legislature.

Resolved, that a copy of this Resolution be sent by the Secretary to the Council of the Massachusetts Medical Society and to each legislator in this District.

Bristol South District Medical Society.—The annual meeting was held in the Public Library of New Bedford on Thursday, May 6, 1920, at 5 p.m. Dr. Ernest B. Young of Boston spoke on "Cancer in Massachusetts." Discussion opened by Drs. Hough and Learned. Elected: President, E. P. Gardner; Vice-President, A. I. Connell; Secretary and Treasurer, A. J. Abbe; Councillors, E. F. Cody, C. F. Connor, A. B. Cushman, W. A. Dolan, R. W. Jackson, A. C. Lewis, A. H. Mandell; Censors, W. A. Dolan, W. E. Blaine, W. T. Learned, C. J. Leary, S. V. Merritt; Nominating Councilor, C. F. Connor; Alternate, R. W. Jackson; Commissioner on Trials, P. T. Crispo.

The Massachusetts Medical Society.

The next annual meeting will be held at the Boston Medical Library, June 8 and 9, 1920. Dr. R. H. Miller, 434 Marlborough Street, Boston, Chairman of the Committee of Arrangements.

Miscellany.

ANCIENT ANSWERS TO PRESENT PROBLEMS.

(Memorandum by Alfred Ela, Boston.)

Among the cuneiform tablets in the Museum of the University of Pennsylvania has remained one evidently containing prescriptions for maladies of the male urinary and genital organs. Accordingly, repeated attempts have been made to read and translate it, but without success until lately, owing to the smallness of its wedge-shaped script. The successful result[1] is sketched herewith for whoever cannot readily examine the paper (in the Boston Public Library or elsewhere), its *apparatus* comprising transcription of what is on the tablet, transliteration, translation, and annotation. The lower half only of the tablet is preserved, giving some 120 lines of text, the date of which the author fixes as about 650 to 600 B.C. (a few centuries before Hippocrates); he has no doubt, however, that this is "but the sediment of much earlier texts, most probably a compilation of a distinct class of sicknesses, which may have been deposited in the library of the king, or else was used as a textbook in schools. "Medical schools at that date seem not improbable in the light of what we have already learned about neo-Babylonia and of what an expert appears to have found in an adjacent part of Asia but of a much earlier time.[2]

The next surviving refers very briefly to say eight classes of symptoms though giving but one name which, the paper suggests, might be translated "gonorrhea benigna"—a conjecture perhaps sufficiently hazardous. The author has tried, in his classification, to range these symptoms with modern terminology, a difficult task because of the brevity of description and because distinctions of diseases were not so sharply made then as in modern medicine. One class of symptoms clearly means enuresis, another, vesical calculi; another (and perhaps a fourth), spermatorrhea; a fifth (and possibly a sixth), prostatitis. Cystitis seems a likely fit for two classes, though one may be traumatism of the bladder and the other, orchitis, etc. Hematuria, from regional parasites, etc., appears a promising candidate for two of the classes, while cystocele, hernia and stricture are in the background. The therapeutic part is far more full and, to be expected from its date (or indeed until rather recently), the multitude of prescriptions and ingredients is greater than today. Curiously, no magical rites enter, though such were to be looked for from the practices in that region;[3] yet specific, astronomical, times for taking certain of the medicines are enjoined but the like have endured, in popular medicine, into our day. Details of the materia medica, and of the preparation and administration thereof, seem unprofitable to go into here, except as to noticing the marked difference, then from this year, in that most of the medicaments were to be mixed with wine.

REFERENCES.

[1] A Contribution to the Knowledge of Assyro-Babylonian Medicine: H. F. Lutz, American Journal of Semetic Languages and Literatures, October, 1919, Vol. xxxvi, pp. 67-83.

[2] A Ladies' College in Cappadocia in the Third Millennium B. C. A. H. Sayce, Journal of the Royal Asiatic Society, October, 1919, pp. 588-591.

[3] See, generally and as introduction to the paper, Babylonian-Assyrian Medicine, M. Jastrow, Jr., Annals of Medical History, 1917, Vol. i, pp. 231-257.

Dr. Warren R. Gilman, for thirty years a practising physician in Worcester, Mass., died in that city on May 2, at the age of 59 years. Dr. Gilman was born in Boston. He was graduated from Harvard College in 1884, and from the Harvard Medical School in 1888, when he began practising in Worcester. He had served on the staffs of the Worcester City Hospital and Memorial Hospital, and had been advisory physician in several charitable organizations. Dr. Gilman is survived by his widow and by two children, Mr. Bradley Baldwin Gilman and Miss Charlotte Gilman.

Correspondence.

THE USE OF ALCOHOL IN THE TREATMENT OF INFLUENZA.

The following letter, written by Dr. Henry A. Christian to the Executive Secretary of the Scientific Temperance Federation of Boston, has appeared in the daily press:

"Your letter, asking what, in my judgment, should be said to the public as to the use of alcoholic liquors in the treatment of influenza, or as a preventive, gives me the opportunity of expressing certain opinions which I hold.

"In the first place, the use of alcoholic liquors in the treatment or prevention of influenza comes in the same category as the use of other remedial agents, namely, they should be used under the supervision of a physician. In the treatment of certain cases of influenza alcoholic liquors have a definitely useful place; which cases require alcoholic liquors is a matter to be determined by the physician, not determined by law or by popular sentiment. Alcoholic liquors, in my judgment, are of no service in the prevention of influenza.

"Temperance societies, like your own, are making a serious error in taking any part in the agitation for or against the use by physicians of alcoholic beverages in the treatment of disease. There is no more reason for them to express opinions in this matter than there would be for them to express opinions as to the advisability or not of the use of digitalis in heart disease. Any sweeping statement for or against the use of alcoholic beverages in illness is unjustified; it is a matter for individual decision in individual cases.

"A serious mistake has been made by those who drafted the present prohibition laws in failing to make provision by which the druggist shall have accessible to physicians' orders an adequate supply of alcoholic beverages of good quality and reasonable price, and in failing to have put in operation, on the prohibition laws becoming effective, machinery by which such supplies were provided and by which all registered physicians' prescriptions should be received and filled without undue red tape leading to delay. There is no reason why such regulations should not be made as are needed to prevent alcoholic beverages intended for medicinal use being used by other than ill individuals on physicians' prescriptions. Such regulations, however, must be of a character not to prevent the prompt availability of alcoholic beverages wherever and whenever needed by ill individuals as determined by legally registered physicians. That such provision was not made is shown by the present conditions; the blame should be assumed by those responsible for these laws and the needed corrections should be made promptly by them. Temperance societies should be willing to give their help in having regulations passed which provide a simple machinery by which druggists may have in stock good alcoholic beverages at reasonable price and by which they may be prescribed and promptly obtained for ill patients.

"In my judgment, in their zeal for a cause, prohibition advocates have done the cause of prohibition harm both by being unwilling to allow to physicians the right to determine how they should treat disease in so far as the use of alcohol is concerned and by being too hasty or too thoughtless in their action to foresee the defects of the laws they supported with respect to provision for the use of alcoholic beverages in illness. In either respect they themselves have been intemperate; in the one case, intemperate in their claims to knowledge of medical science, in the other, intemperate in allowing the end sought to blind them to possible evils or errors in the laws seeking those ends.

"My advice to you and your office as to how to answer the question as to the advisability of the use of alcoholic beverages in influenza is that you should reply that this is a medical question to be answered by a physician and not a question for you to answer owing to your lack of knowledge of medical science. There is no reason whatsoever why this information should pass through your office and many reasons against it.

"Very sincerely yours,
"HENRY A. CHRISTIAN."

RESEARCH IN PHYSIOLOGY IN CALIFORNIA.

Claremont, California,
April 28, 1920.

Mr. Editor:

I have the honor to suggest that measures be adopted to effect the realization of research work in the several departments of physiology (chemical and physical) through experimentation upon the persons under legal control of the state authorities. The results of such work may become of great value—mental and corporal—to the public, to American citizens, to humanity in general.

Permit me to add:

Claremont, thirty-five miles east of Los Angeles on the Santa Fé Railroad, is the seat of Pomona College, of Phi Beta Kappa grade—a progressive seat of learning *in esse;* Claremont University *in posse.* The college possesses now some features of university character. The student list for the coming year numbers seven hundred, more having been refused because of lack of facilities to treat them well.

There are lectures by exchange professors, also a public course of music and speakers from all the world during the term year. Recently has been added, by authority of the State of California, a post-graduate Department of Education to prepare teachers for various grade schools. The Department of Law, Astronomy, Economics, Biology, Languages (ancient and modern), have a wide reach.

FRANKLIN BACHE STEPHENSON, M.D.,
United States Navy.

NOTICES.

BOSTON CITY HOSPITAL.—May clinical meeting of the Boston City Hospital on Thursday, May 27, at 8.15 P.M., in the Cheever Surgical Amphitheatre.

The professional graduate and undergraduate is cordially invited.

Case demonstrations.

1. Statistical Studies of 400 Autopsies in Lobar Pneumonia. Frank Berry, H. M. Thomas, Jr.
2. Lung Punctures in Lobar Pneumonia; Bearing on the Mechanism of Crisis. H. M. Thomas, Jr., Frederic Parker, Jr.
3. Case Reports. Dwight O'Hara.
4. Bacteriological Studies of Influenza. Howard Osgood.
5. General Survey of the Year. E. A. Locke.

HALSEY B. LODER, *Chairman.*

MASSACHUSETTS GENERAL HOSPITAL.—Clinical meeting May 19, at 8 P.M., in the lower amphitheatre, Out-Patient Department.

Program as follows:

1. Spasticity and Muscle Tone. Dr. Stanley Cobb.
2. Spinal Fluid. Dr. James B. Ayer.

Dr. E. W. Taylor presiding.

Doctors, nurses, and medical students cordially invited.

MASSACHUSETTS GENERAL HOSPITAL.—The next clinical meeting of the Out-Patient medical staff will be held in the lower Out-Patient Department amphitheatre on May 26, at 12 noon.

Program as follows:—

1. Congenital Heart Disease. Dr. R. S. Eustis.
2. Therapeutic Value and Use of Quartz Light. Dr. E. L. Eustis.

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Original Articles.

A NOTE ON JOHN HUNTER AT OXFORD.*

By Henry Viets, M.D., Boston.

"They wanted to make an old woman of me, or that I should stuff Latin and Greek at the University; but," added he, significantly pressing his thumb-nail on the table, "these schemes I cracked like so many vermin as they came before me." (Hunter to Sir Anthony Carlisle.)

So spake John Hunter late in his life as he reflected on the couple of months that he spent at Oxford. Such a forceful sentence is characteristic of him; it is inconceivable that he could have spoken otherwise. His whole life prior to 1775, when he went up to Oxford from London at his brother William's suggestion was hardly preparatory to Oxford idealism.

As a raw Scotch boy at his home in Long Calderwood, Lanarkshire, he was near enough to have followed his older brother, William, ten years his senior, to the University of Glasgow, hardly more than a ten-mile walk, or to the consulting room of the genial William Cullen, a scant five miles to the south of his home in the town of Hamilton. Even Edinburgh, with the already famous Alexander Monro, 50 miles away, had drawn William for a winter but failed to catch the younger brother. John knew none of these things. His childhood and adolescence were dream days, filled with rambles through the woods and vales observing Nature. "When I was a boy," he later said to himself, "I wanted to know all about the clouds and the grasses, and why the leaves changed color in the autumn. I watched the ants, bees, birds, tadpoles, and caddis-worms." Indeed this observation of nature was his life work. At 34 we hear of him in the army at Portugal, lying on the bank of a fishpond in a nobleman's garden, observing the fish swimming about and attempting in his own mind to note their organs of hearing. Much later in his life, when he was the leading physician of London, he had built for him a summer estate at Earl's Court, near the city, with a large zoo for the observation of animals.

The boy, then, whom we have seen wandering over the hills of Scotland, was crude, uncouth, and self-willed, a youngest son and "spoiled" by his mother. He was slow in learning to read and hated school-books. His letters all his life were full of errors of spelling and grammar, and yet this boy became the greatest name in Anglo-Saxon medicine.

So when this coarse but brainy Scotch lad of twenty, bred in the open, went to London

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* Read at a meeting of the Harvard Medical Society, January 6, 1920, Peter Bent Brigham Hospital, Boston.

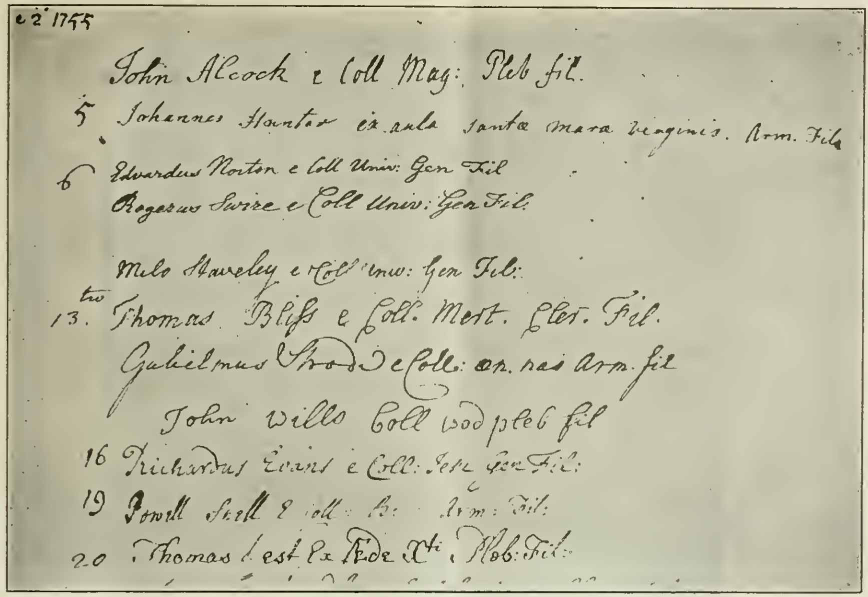
William Hunter.

John Hunter

in 1748 to work with his polished brother William, is it any wonder that he was hidden away in William's dissecting room until he could be made into his brother's idea of a gentleman? John buried himself in dissection, "bore the rough work, hobnobbing with the resurrection-men, slaving all day long in unwholesome air." In the evening we must think of him either working or seeking recreation among the none-too-respectable class of resurrection-men of the Jerry Cruncher type or mingling "with the gods in the shilling gallery, for the purpose of assisting to damn the productions of unhappy authors, an office in which he is said to have displayed peculiar tact and vigor."

Let us look for a minute at the two brothers in the famous dissecting rooms in Great Windmill Street, London, on a winter's day in 1750. William is only thirty-two but has been in London nine years and giving lectures to medical students for six. John, now twenty-two, has been an apprentice to his brother only two years. These two men are far apart in temperament: William, the London gentleman physician, well dressed and with perfect manners, has a delicate, finely chiseled face and sensitive hands. He is best as a lecturer, clear, careful, and precise. One finds it difficult to think of him, with his lace cuffs and velvet jacket, digging away at a dirty dissection. He already is well known and has an active practice, sometimes running away to see patients while John carries on the lectures and demonstrations. John is larger and more clumsy than William, though not quite so tall, his features lacking his brother's good looks, but his "whole face and figure are full of indomitable strength." William is physician-accoucher to the Middlesex Hospital and surgeon-accoucher to the British Lying-In Hospital, so he is glad to have John, a relentless worker, as his prosector. The work is rough, the air unwholesome and fatal putrid myasma by no means uncommon among anatomists. In this atmosphere the brothers work, John dissecting while William lectures and demonstrates.

After a year or two of the dissecting room, William began to "scheme" for John. He wanted his crude brother to become a gentleman physician, so he obtained leave for John to work with the kind and gentle Cheselden at the Chelsea Hospital. He probably worked as a surgical dresser and "walked the wards." When Cheselden died in 1751 John went as a surgeon pupil to Percivall Pott of St. Bartholomew's Hospital. He remained only a short



e 2 1755

John Alcock e Coll Mag: Pleb fil.

5 Johannes Hunter ex aula santae mara virginis. Arm. Fila

6 Edwardus Norton e Coll Univ: Gen Fil

Rogerus Swire e Coll Univ: Gen Fil.

Milo Haveley e Coll Univ: Gen Fil:

two
13. Thomas Bliss e Coll. Mert. Cler. Fil.

Gulielmus Strode e Coll: Or. nal Arm. fil

John Wills Coll Wad pleb fil

16 Richardus Evans e Coll: Jesu Gen Fil:

19 Powell Snell e Coll: B: Arm: Fil:

20 Thomas Lest Ex Ede Xti Pleb: Fil:

Page from the Registrum Subscriptionum, Bd. 7, Ad., An. 1740, Ad., An. 1776. Under the date of June 5, 1755, John Hunter's signature is found. (I am indebted to the Keeper of the Archives, Oxford, Reginald L. Poole, Esq., for permission to photograph this signature.)

time, and settled down to surgery at St. George's Hospital in 1754.

In 1755, when John was twenty-seven, William persuaded him to go up to Oxford, perhaps "to stuff Latin and Greek," but more probably to acquire the university manner, so essential, from William's point of view, for a gentleman physician. John matriculated on the fifth of June, 1755. Three years ago, while in Oxford, I found his name in the *Registrum Subscriptionum*, the book signed by all scholars on their entrance to the University. He was the only man to register on that day and signed a rough signature with obvious errors in the Latin, "Johannes Hunter, ex aula santae marae virginis, Arm. Fil.," son of a family with an armorial crest. The book was closed before the signature was dry, perhaps with a bang, to show the registrar's contempt for Hunter's Latin.

He was in Oxford only about two months, as the last entry for battles against his name in the buttery accounts was dated the twenty-fifth day of July, 1755. His name, however, remained on the books until the tenth of December of the next year, but he certainly was not in Oxford during the spring and summer of 1756, for we know he was house-surgeon at St. George's from May to September. His college was St. Mary's Hall, a part of Oriel College, but run as a separate place of education. There were no matriculation examinations so John entered on a somewhat lower standard than students at other colleges. The Hall is no longer standing and as a college is now an integral part of Oriel.

So John Hunter "cracked the schemes" to "make an old woman" of him and came back to London to continue his career in more productive fields. William took him back and did not lose faith. John said afterwards, when accused by a friend of not understanding the dead languages, that he "could teach that on the dead body which he (the friend) never knew in any language, dead or living." The scheme fell through; no harm was done, and 165 years later it merely serves as an interesting note on the characters of William and John, the gentleman physician and the master physiologist, surgeon, and scientist.

FRACTURE OF THE POSTERIOR TUBERCLE OF THE ASTRAGALUS VS. INCONSTANT OS TRIGONUM.

BY FREDERICK W. O'BRIEN, M.D., BOSTON

THERE is a paucity of exact literature regarding the genesis and nature of the inconstant supernumerary ossicle sometimes found on the outer side of the posterior external tubercle of the astragalus and known as the os trigonum.

When seen on roentgen examination in the absence of clinical symptoms or history of injury its discovery may be only of academic interest.

However, with presenting symptoms localized or referable to its anatomic situation its presence gives rise to the query whether we are dealing with a fracture or the processus posticus tali or an anomalous marsupial remnant.

Furthermore, clarity in diagnosis is not helped by our present uncertain knowledge as to whether or not the posterior external tubercle is in reality nothing but a union of the epiphyseal os trigonum with the astragalus. If we accept the os trigonum as a mammalian vestige that remains distinct from the astragalus, then it is evident that many authors, when

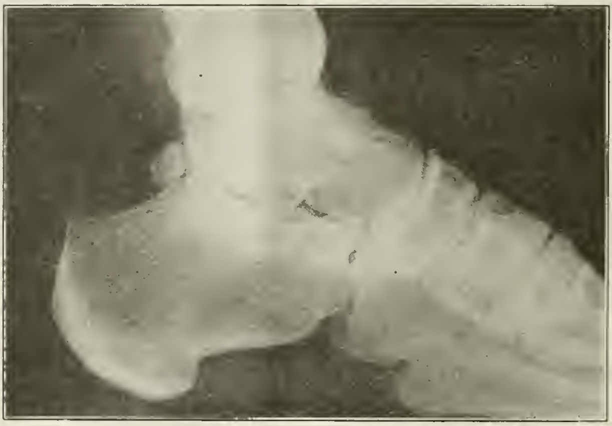


FIG. 1.—Left foot, July 21, 1919, showing fractured posterior tubercle.

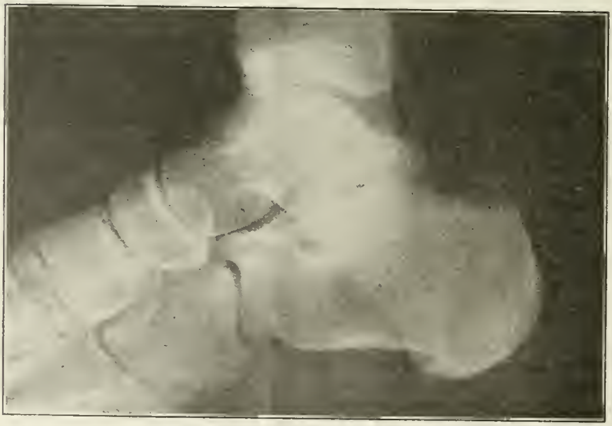


FIG. 2.—Right foot, July 21, 1919, showing apparently normal astragalus, well developed posterior tubercle, no evidence of separation.

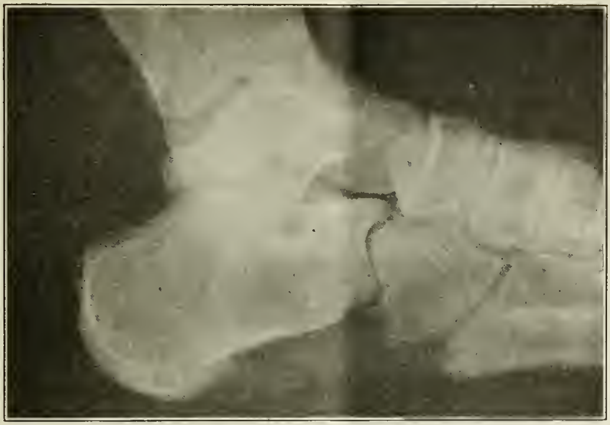


Fig. 3.—Left foot, Aug. 13, 1919, showing apparent union of fractured posterior tubercle.

writing of fracture of the os trigonum have really meant fracture of the posterior tubercle of the astragalus.

Finding, on roentgen examination, what appears to be a separate ossicle in the region of the posterior lateral tubercle in one foot and not in the other has been advanced by some as proof that one is dealing with a genuine os trigonum. This may be accepted, provided it is not found in the clinically sick member and that there is no previous traumatic history connected with the supposedly well foot.

Roentgenologists continually observe this questionable anomaly without the reflection I believe it deserves. The following case presented some unusual features which led to this study.

George M., aged 23, was referred for x-ray examination of his left foot and gave a history at the time of pain in the region of the ankle joint and of having come down hard on his heel, twisting his ankle, some time previously. He was definitely tender to palpation just posteriorly to the external malleolus. X-ray examination was made of both feet on July 21, 1919, and a report made to his physician of fracture of the posterior tubercle of the left astragalus. Attention was called to the possibility that what was thought to be a fracture fragment could be the inconstant os trigonum. The right foot was normal and showed a well developed posterior tubercle. Because of his clinical symptoms and the x-ray findings, it was advised that the case be treated as a fracture. The foot was put in plaster.

On August 13, the patient was reëxamined and a report made of "X-ray evidence of union of the fractured astragalus." October 21, 1919, the patient was referred for x-ray examination of the right foot and presented the clinical signs of pain on walking and pain on palpation in the region of the external malleolus but could not remember any injury. What appeared to be a fracture of the posterior tubercle of the right astragalus was found and so reported to his physician, who placed this foot in plaster.

On November 19th the patient returned for examination and the x-ray report read "Fracture of the posterior tubercle of the right astragalus, ununited. No evidence of separation of recent fracture fragments of left foot."

From further study of the plates of this case and of the literature, I am convinced that in the first instance there was a definite fracture of the posterior tubercle of the astragalus in the left foot and in the right foot a separation of an os trigonum from its cartilaginous attachments.

If the os trigonum is a separate entity and not an epiphysis, then the failure to have demonstrated it on the first examination in the right foot may have been due to the extent and closeness of its cartilaginous attachments which were later separated by slight injury although the matter of roentgen technic should not be ovelooked, for unless the angle of rays is correct there might well be an overlapping of structures which would preclude proper definition.

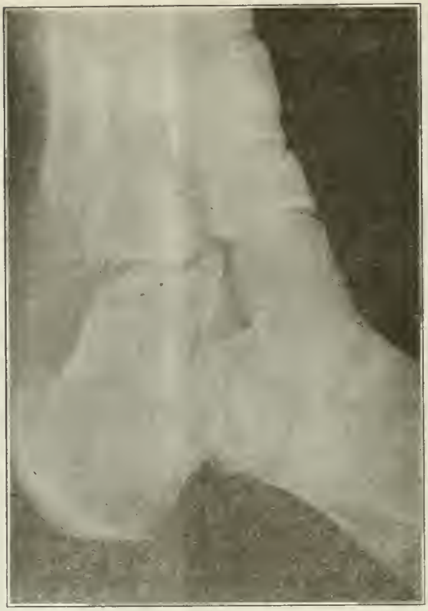


FIG. 4. Right foot, Oct. 21, 1919, showing fractured posterior tubercle, epiphyseal separation or inconstant os trigonum? (See Fig. 2.)

Anatomists who insist very strongly that the os trigonum is not the same thing as the tubercle say it may represent practically the whole of the external posterior process, that it may be truly fused with the astragalus or closely joined by synchondrosis.

Dwight describes the hind part of the astragalus as being drawn out backwards into a projection, grooved by the tendon of the flexor hallucis muscle, which runs obliquely downwards from without inward. The outer border of this groove is made by the posterior external tubercle. The inner border may be very ill defined or may be marked by the posterior internal tubercle. The external tubercle on the outer border of the groove has not the slightest mechanical function unless perhaps that it prevents the tendon from falling outwards during the total relaxation of the muscle. Certainly when the muscle is contracting the tubercle is of no value. On the outer side of this tubercle is the trigonum, which, he says, in some seven or eight per cent., is a distinct bone. Its lower surface continues the articulation of the astragalus with the os calcis.

v. Bardeleben found it a distinct piece of cartilage in the second month of embryonic life, situated between the bones of the leg and therefore homologous with the triangulare. Dwight found it distinct in cartilage at birth and writes that it is hardly found in animals except in the marsupials and is constant in those of that order which have five toes. It is very variable in size and development. Very rarely it is found in two pieces. When it is free it is generally joined to the astragalus by a little fibro-cartilaginous tissue, the bony surfaces being in close apposition, exceptionally there may be a true joint. Sometimes the union may be by cartilage. When it is truly fused so that there is but one bone, the outline of the trigonum may be perfectly clear or very hard to make out. The trigonum tends to be in the main symmetrical but may be distinct on one side and fused on the other. Fused though clearly marked off trigona may be easily overlooked and a free one may be so closely joined by synchondrosis as not to be recognized without great care.

Skillern states that the os trigonum was first described by Rosenmuller in 1804, that normally it remains independent for only a short time, uniting to the astragalus, and that only in some three per cent. of cases it persists as an independent bone. Aside from man, it is found among mammals only in the wombat. He further declares that it is present on both sides and has the peculiarity of being usually rudimentary on one side. He quotes Stimson to the effect that fracture of the processus posticus tali was first mentioned by Cloquet in 1844. Lilienfield in some six hundred fractures observed by him at the Zender Institute saw seven isolated fractures of the posterior tubercle and five in conjunction with fracture of the calcaneum. It is pointed out that Stimson and others confuse fracture of the posterior tubercle with the inconstant os trigonum. Thus Stimson quotes Lilienfield as having observed twelve fractures of the os trigonum whereas a reference to this article shows that it was the processus posticus tali that was fractured.

Stealey consulted two hundred and fifty-six authors in a review of the literature on fractures of the astragalus up to 1909, but makes no mention of fracture of the os trigonum. Since that time x-rays have been employed with greater frequency and success and yet I have not been able to find anywhere in the literature any reference to fracture of the os trigonum as such.

If the os trigonum is only loosely attached or at other times fused with the astragalus, it follows that it might very well be pulled off by strain on the posterior bundle of the external lateral ligament of the ankle. If fused with the astragalus it could be separated by the same forces as fracture of the posterior tubercle, *viz.*, a fall upon the heel with the foot in plantar flexion. It seems fair to conclude the roentgenologist should make a closer study of this region in the presence of clinical signs.

BIBLIOGRAPHY.

Dwight: Variations of the Bones of the Hand and Foot. Lippincott, Philadelphia, 1907.
Sewall: A Study of the Astragalus. Journal Anat. and Phys., Vol. xxxviii, July, 1904.
Cabot and Binney: Annals of Surg., Vol. xlv, 1907, p. 56.
Stimson: Fractures and Dislocations. 7th ed., 1912, p. 459.
Lilienfield: Archives f. klin. Chir., 1905-06, lxxxvii, p. 945.
Skillern: Trans. Phil. Acad. Surg., Vol. xvii, 1915.
Weber: Das Intermedium Tarsi. Jenaische Gesellschaft für Med. und Naturwissen, 1883.
Vollbrecht: Fortschr. a. d. Gebeit. d. Roentgenstrahlen, 1900.
Stealey: Surg., Gyn., and Obstet., January, 1909.
Bennett: Jour. Anat., 1886-87, Vol. xxi, p. 59.

THE PRODUCT OF A UROLOGICAL CLINIC.

By William C. Quinby, M.D., Boston.

(Concluded from page 529.)

25. Man, No. 6806, aged 82, married, 29-v-17. Hypertrophy of prostate. Perineal prostatectomy. No evidence of malignancy. Three lobes enucleated. No excess of bleeding. Complications: Preoperative treatment for twelve days was complicated by inefficiency in catheter control. Fever resulted. Renal output continued adequate. Three days after operation broncho-pneumonia followed by death. Autopsy confirmed this diagnosis and showed acute fibrino-purulent pleurisy and infarction of the lung.

26. Man, No. 5874, aged 66, 9-xii-16. Hypertrophy of prostate. (1) Perineal prostatectomy. (2) Repair of rectal fistula. The rectum was entered on freeing tip of prostate. Operation closed this by diverting urine and local suture. No complications. Discharged well twenty-seven days after second operation. Result: v-19 Patient feels well. No urinary disturbance except nocturia once. Constipation. The rectum admits forefinger but the sphincter does not contract down. No incontinence of feces.

27. Man, No. 5142, aged 72, married, 26-vi-16. Hypertrophy of prostate, median bar. Partial prostatectomy. Punch operation. No complications. Patient discharged six days after entrance Result: 1-v-18. Operation relieved obstruction. Patient has since had acute gonorrhea; otherwise is well.

28. Man, No. 7803, aged 67, 6-xii-17. Hypertrophy of prostate. Chronic nephritis; inguinal hernia; cystitis. Suprapubic prostatectomy: removal of median bar. The obstruction was removed by three bites of tonsil punch. Complications: The patient's condition was increasingly uremic, beginning about one week after operation. There was gradual improvement due to hot air baths and forced fluids, and the patient was discharged about two months after operation in fair condition. Result: It has been impossible to trace the patient. Probably dead.

29. Man, No. 6675, aged 56, married, 1-v-17. Hypertrophy of prostate. Median bar. Suprapubic partial prostatectomy by excision of median bar. No complications. The patient was discharged on the twenty-first day after operation with wound healed. Result: 16-xii-18. Patient is well. Very rarely rises once at night to urinate. The urine is clear with a few shreds.

30 Man, No 6417, aged 60, married, 13-iii-17. Hypertrophy of prostate. Suprapubic partial prostatectomy by excision of median bar.

Complications: Slight swelling of right leg. Patient was discharged on twenty-fourth day after operation. 1-ix-19. Has obtained an excellent functional result. Urine contains a little pus. No residual found in bladder. Has had one or two attacks of phlebitis with swelling of leg for which he wears an elastic stocking.

31. Man, No. 7070, aged 59, married, 19-vii-17. Prostatic obstruction from median bar, causing increasing pain and tenesmus, and finally acute pyelonephritis. Suprapubic cystotomy for relief of kidneys. Complications: Steady decline with high fever, hematuria and pyuria. Death ten days after operation. Autopsy: Showed bilateral suppurative pyelonephritis, and hypertrophy of the middle lobe of the prostate and broncho-pneumonia.

32. Man, No. 6786, aged 62, married, 24-v-17. Hypertrophy of prostate. Patient has been critically ill for eleven weeks before entering hospital: had had a slight paralytic attack which was followed by severe headaches, persistent hiccough, and glycosuria. On 4-vi-17 the bladder was drained by suprapubic cystotomy to relieve the kidneys. Complications: Steady downhill course with death on nineteenth day. Autopsy: Showed bilateral pyelonephritis; aplasia of right kidney: hypertrophy of prostate and bladder; acute cystitis, subdiaphragmatic abscess (left) with hyperplasia and necrosis of the spleen.

33. Man, No. 6611, aged 66, married, 16-iv-17. Hypertrophy of prostate. Patient in very precarious condition. He was put on constant drainage by urethra, but his general condition steadily declined. Death occurred on twentieth day after entrance, with signs of extreme uremia. Autopsy: Showed hypertrophy of prostate and bladder; acute purulent cystitis; ureteritis and pyelonephritis; chronic nephritis and abscesses of kidney; emphysema of lungs.

34. Man, No. 6454, aged 59, married, 19-iii-17. Hypertrophy of prostate. Operation was advised but was refused. Renal function 60%. Urine not infected. Discharged 24-iii-17. Result: 23-vi-18. Urine normal. Condition no worse. Symptoms unchanged.

35. Man, No. 5519, aged 64, 5-x-16. Cancer of the rectum; hypertrophy of prostate; difficulty in urination. Condition not bad enough to warrant colostomy, although growth appeared inoperable. In view of malignancy elsewhere it was not deemed wise to attack prostate. Patient was discharged six days after admission. Result: Letter from son states the patient was operated on at another hospital, and died on 19-i-18.

36. Man, No. 5598, aged 61, 18-x-16. Hypertrophy of prostate; impending uremia. No operation. Patient died two days after entrance. Autopsy: Showed pelvic peritonitis; myelogenous leukaemia; hypertrophied prostate with infection of bladder and kidney.

Of the cases of complete prostatectomy 16 were done by the suprapubic method and 10 by the perineal. There were three deaths, two in the former group and one in the latter. In Case 14 it was probably a mistake to subject the patient to further operation. His condition was deplorable and fast becoming worse, because the suprapubic opening made two months earlier at another hospital had been allowed to become so small that no relief to the obstruction at the neck of the bladder was afforded. Excessively painful urination prevented sleep without the aid of drugs. No phenolsulphonephthalein was excreted at all. The bladder was very septic. Cases 15 and 16 died of broncho-pneumonia. In the first instance this could not be accounted for by any condition at the site of operation; in the second, it is probable that local sepsis may have been the starting point of a more generalized infection.

Adding to these cases four of partial prostatectomy for median bar, the total number is 30, and the mortality of this group is then 10 per cent. It is to be hoped that this percentage of deaths can be reduced in later series of cases.

Case 6 teaches the lesson that a diverticulum may be overlooked even when the bladder is open to view, if it have a small orifice which becomes shut when the bladder is flaccid. Search for such condition should be most carefully made both on cystoscopy and at operation.

In Case 17, it is certain that a cancer of the prostate was overlooked. But the pathologist also failed to find cancer in those portions of the gland examined. The later clinical course of the patient, however, indicates clearly that death was caused by a spinal metastasis.

Cases 23 and 26 were complicated by a fistula communicating with the rectum; Case 24 by one persisting in the perineum. Each of these instances was the result of faulty surgical technic and therefore should be obviable. Their occurrence merely means that the perineal operation is more difficult in performance than the suprapubic. It certainly does not signify that the perineal operation is less good for the patient if it be properly done. (For further information see: W. C. Quinby, "Standardization of Methods in Cases of Prostatic Obstruction," *Am. Jour. of the Med. Sciences*, 1919, Vol. CLVII, No. 3, p. 390.)

PROSTATITIS.

Man, No. 6006, aged 47, married, 3-i-17. Prostatitis with slight prostatic enlargement. Perineal prostatectomy No line of cleavage. Enlargement mostly due to infection. Complications: Occasional slight fever. Discharged eighteen days after operation. 20-x-19. Result: Feels entirely well when he keeps bladder clean, which he has done by regular visits to Out-Door Department. Has a residual of about 10 or 15 cc.

GONORRHEAL PROSTATITIS.

1. Man, No. 5814, aged 32, 29-xi-16. Gonorrheal prostatitis and vesiculitis. Arthritis, double seminal vesiculotomy. Several incisions were made in each vesicle. Drainage by rubber tube. Complications: Wound of bladder caused slight leakage of urine which still persisted on discharge on twentieth day after operation. Result: 15-iii-17. Marked improvement in joint. Perineal sinus persists. Treat by dilatation of urethra. 12-iv-17. Patient still has a few drops of urine coming through sinus, although this is often dry for two or three days. No further data.

2. Man, No. 6678, aged 28, married, 1-v-17. Painful swelling of the left knee due to gonorrheal arthritis. Gonorrheal prostatitis and vesiculitis. No operation. Patient discharged after seven days, for treatment as an ambulatory case. Result: 29-vi-18. Patient is much improved. Has occasional perineal pain. The urine is normal. 14-vii-19. Patient still under treatment in the Out-Door Department for syphilis.

CANCER OF THE PROSTATE.

1. Man. No. 5394, aged 64, 13-ix-16. Cancer of the prostate, causing pain and frequency. Sufficient tissue removed by perineal route to free the neck of the bladder. Complications: Transient left pleurisy. Otherwise normal convalescence. Discharged twenty-second day after operation with wound healed and urination much less difficult. Result: Patient died in ix-17.

2. Man. No. 7533, aged 74, 16-x-17. Cancer of prostate, causing frequent, painful urination, together with sciatica, for which patient was compelled to use crutches. Radical operation out of the question. Suprapubic cystotomy for permanent drainage of bladder. Result: 1-xii-17. Condition surprisingly good: sciatica leaving. Confined to house, however. Catheter works well with practically no desire to urinate by urethra. Is slowly losing ground. 12-v-18. Is definitely failing. Bladder badly infected, but has no fever, and catheter works well. 17-xii-18. Has fair appetite: sleeps fairly well, and has but little "sciatica." He is recently having trouble with gas. Usually out of bed once each day. viii-19. Died.

3. Man, No. 7464, aged 76, 2-x-17. Cancer of the prostate which had caused complete retention during past two years. Patient uses catheter himself, and seems to tolerate it without much trouble. On rectal examination a mass was found bulging toward rectum which was almost pedunculated. It was impossible to pass a cystoscope to examine the prostate on its other surface. No operation advised, inasmuch as patient was very comfortable. Subsequent course: 27-iv-19. Writes from Florida, "Considering the ills which have menaced me for some years, I have had a remarkable winter." Patient's condition seems to be stationary, he having acquired resistance to the chronic infection of the bladder to a remarkable degree. It is not evident that the prostatic mass is increasing in size except very slowly. This can be judged by the fact that only recently patient has had to introduce catheter with a stylet, which has not been necessary before.

Case 2 illustrates well the slow progression which occasionally occurs in prostatic cancer. For almost two years the patient was kept entirely comfortable in so far as the bladder was concerned, by suprapubic drainage.

Case 3 has lived for considerably over two years in very fair general health, in spite of prostatic malignancy. For over four years all urine has been voided through a catheter. The wisdom of withholding operation can hardly be doubted in this instance.

HYDROCELE.

1. Man, No. 4843, aged 41, married, 5-vi-16. Inguinal hernia; left hydrocele. Excision of hydrocele sac with repair of hernia. No complications. The patient was discharged twenty-two days after admission. No further data.

2. Man, No. 5243, aged 35, 17-viii-16. Left hydrocele. Excision of hydrocele sac. Complications. There was considerable swelling for a period of twenty-one days. The patient was discharged twenty-one days after operation. No further data.

3. Man, No. 5700, aged 49, married, 8-xi-16.

Left inguinal hernia, and hydrocele of cord. Herniotomy with removal of hydrocele. Patient was operated on at the Massachusetts General Hospital on the 27-vi-16, by drainage of the bladder. Prostate stated to be normal. Their diagnosis was chronic retention of urine and cystitis. The urine still contains pus. Complications: A few minute stitch abscesses formed. Patient was discharged on the twelfth day after operation. Result: 6-xi-19. A letter from patient's sister states he is well and at work.

4. Man, No. 5786, aged 20, 24-xi-16. Hydrocele of cord. Excision of hydrocele with repair of external ring. Complications: Post-operative coryza and pharyngitis. Patient discharged fourteen days after operation. No further data.

5. Man, No. 5821, aged 51, 1-xii-16. Hydrocele. Radical operation for hydrocele. Bottle method. Second day after operation patient had fever and a chill, but temperature was normal the next day. The patient was discharged eleven days after operation. No further data.

6. Man, No. 6971, aged 32, 2-vii-17. Right inguinal hernia. Right hydrocele. Repair of hernia and excision of hydrocele sac. No complications. Patient was discharged on sixteenth day after operation. Result: 23-vi-19. Letter from patient states that he has been in excellent health since operation.

7. Man, No. 7517, aged 45, 12-x-17. Hydrocele. Excision of hydrocele sac. The sac was firm and fibrous. Complications: On the eighteenth day incision and drainage for hematoma was necessary. Patient discharged on the twenty-eighth day after operation. No further data.

VARICOCELE.

1. Man, No. 5241, aged 23, single, 17-viii-16. Left varicocele. Fistula in ano. Excision of varicocele and of fistula. Anterior group of veins involved. Ligatures of silk. No complications. Patient discharged on eleventh day after operation. Result: 30-iv-18. Doubtful if fistula is entirely cured. 2-v-18. Patient had a boil which broke near anus. Diagnosis: Subsiding furuncle. No fistula. Varicocele all right.

2. Man, No. 5370, aged 29, single, 10-ix-16. Left varicocele. Excision. No complications. Patient was discharged on the eighth day after operation. 28-vi-18. Letter answered by patient, who is in the Gas Defence Service in Washington. He states that very seldom does he feel pressure in the veins of groin similar to that experienced before operation. Testicle, however, is very hard. He is occasionally troubled with indigestion and constipation, and also distressed with swelling of the testicle and resultant pressure.

3. Man, No. 5695, aged 18, single, 7-xi-16. Right hernia and left varicocele. Repair of hernia and excision of varicocele. Complications: Unexplained fever for two days. Patient discharged on the fifteenth day after operation. Result: 29-xi-16. Patient has had no trouble since operation. Examination shows tight ring on the right. No recurrence of varicocele on left. No further data.

4. Man, No. 5847, aged 28, single, 5-xii-16. Left varicocele. Excision of varicocele, and circumcision. No complications. Patient was discharged on the seventh day. Result: 23-vii-18. Letter from patient's wife states that he is better, but when doing heavy work he has pain and swelling.

SEMINAL VESICULITIS.

1. Man, No. 5467, aged 34, single, 27-ix-16. Epididymitis and seminal vesiculitis. Hemospermia. Seminal vesiculectomy. Incision and drainage of tunica vaginalis. Complications: Fever, and recurrence of epididymitis. Discharged thirty-six days after operation. Result: 6-iii-19. Patient still complains of dull pain at the neck of bladder, and states that during defecation blood emerges from urethra. Cystoscopy. Bladder neck is very tender. Mucosa is normal, and the ureteral orifices are normal with clear urine coming from each. Subcervical region shows hemorrhage and exudation. There are fine pinkish-red corrugations in the prostatic portion of urethra. 22-vii-19. Patient says he feels much better. He has had lavage of bladder and prostatic massage once every two weeks. 26-viii-19. Patient says he feels fine. Urine clear. No pains except slight burning in bladder.

2. Man, No. 7445, aged 32, single, 28-xi-17. Long standing pain and stiffness in shoulder, knees, ankles, and spine, with marked limitation of motion. Chronic arthritis and seminal vesiculitis. Double seminal vesiculectomy. No frank pus found in either vesicle. No complications. Patient was discharged on eighteenth day with small sinus persisting. No special change in joints. Result: 30-vii-18. Patient writes that he has not been able to work since leaving hospital. His right leg was "drawn up." 2-vi-19. Reëntry. Consultation with Dr. Z. B. Adams finds process in joints still active. 23-vi-19. Removal of prostate. Excellent convalescence. Patient discharged on twentieth day after operation. No immediate change in joints.

It is hard to believe that Case 1 would not have recovered sooner had less radical treatment been employed. Case 2 was a cripple when first seen. It is not yet evident that operation has been of any benefit.

ACUTE EPIDIDYMITIS.

Man, No. 5743, aged 51, married, 16-xi-16. Acute epididymitis and non-venereal prostatitis. Epididymotomy. No complications. Patient was discharged seven days after operation. Result: 1-ii-17. Since leaving the hospital, patient's convalescence has been uninterrupted. He has been having weekly dilatation of the posterior urethra reaching size 35 F. and followed by AgNo$_3$ 1-5000 and massage of prostate. The urine is now free from shreds. The epididymis is almost normal in size and has lost its unusual tenderness. 1-i-18. The local condition for which I operated has remained well. Very rarely has slight irritability as though from prostatitis. Since last report, has had his appendix removed and is much improved.

GONORRHEAL EPIDIDYMITIS.

1. Man, No. 5430, aged 23, 21-ix-16. Gonorrheal epididymitis. Incision and drainage of epididymis. No complications. Patient was discharged on the eleventh day after operation. Result: 16-vii-17. Has been under treatment in the Out-Door Department. Urine clear without shreds. No further data.

2. Man, No. 7701, aged 28, 15-xi-17. Gonorrheal epididymitis. Epididymotomy. No complications. The patient was discharged two days after operation. Result: 16-xii-18. Patient was entirely free from symptoms. Use of alcohol and intercourse brought no recurrence of trouble. Urine clear. 20-x-19. Patient stated that he was entirely well.

TUBERCULOSIS OF THE EPIDIDYMIS.

1. Man, No. 4755, aged 36, 19-v-16. Tuberculosis of each epididymis. Possibly tuberculosis of the prostate. Tuberculosis of the lungs. Right orchidectomy. The testicle and the epididymis were both involved and therefore removed. The vas was pulled down as far as possible and then cut off. No complications. The patient was discharged eight days after operation. Result: 20-ii-18. Patient states he has been well but is not as strong as before operation. Physical examination shows the left epididymis to be involved. Patient wears a suspensory and says testis gives no discomfort.

2. Man, No. 5010, aged 21, 5-vii-16. Question of tuberculosis of the epididymis. Epididymectomy. High incision. No tuberculosis found; disease evidently due to gonorrhea. The patient was discharged on the eleventh day after operation. Result: 14-v-18. Condition entirely normal.

3. Man, No. 5880. aged 27, single, 11-xii-16. Complaint: Swelling of the scrotum. Tubercular epididymitis and vesiculitis. Vesiculectomy; vasectomy; epididymectomy; orchidectomy. No complications. The patient was discharged on the twenty-first day after operation. Reëntry: 19-iii-18. One month before reëntry the patient contracted gonorrhea. This caused epididymitis. The recovery from this attack was uneventful, and no evidence of recurrent tuberculosis was found. 1-v-18. Patient still under treatment in Out-Door Department for prostatitis. Reëntry: 30-xii-18. Recently the epididymis has become more nodular and painful. The urine is slightly turbid. Epididymis excised. No complications. Patient discharged on seventeenth day after operaton. At this time the ureters were catheterized and it was found that the urine from the right kidney contained tuberculosis bacilli. There was also evidence of tuberculosis of the bladder. It was not possible to catheterize the ureter on left side. 18-ii-19. Tuberculin treatment started and continued at intervals of twice a week, lasting through April. 17-v-19. Patient feels somewhat better but urine is still cloudy and there is frequency and occasional slight hæmaturia. Patient is evidently losing ground.

4. Man, No. 5920, aged 25, 18-xii-16. Tuberculosis of epididymis and vesicle. Vesiculectomy: vasectomy: epididymectomy. Not a great deal of perivesicular infiltration was found. Complications: Slight persistence of bleeding from perineal wound for several days. Patient catheterized for a few days after operation. Discharged sixteen days after operation. Result: 12-i-17. Patient came to Out-Door Department for treatment. The perineum was healed, and the scrotum nearly so. No difficulty in regard to urination. The urine was clear, with a few granular shreds, and was passed at normal intervals. 10-ii-17. Patient had gained eight pounds. The scrotal wound was not entirely healed. 10-iii-17. A sinus appeared in the perineum discharging a few drops of pus intermittently. 24-viii-17. The sinus remained closed almost entirely. The patient had been working and had lost weight. Was put on a course of tuberculin. 1-x-17. During summer vacation patient showed marked improvement. No further discharge from sinus. Gain of fifteen pounds in weight. 28-iv-18. Patient reported that although he had been working, his health had been excellent during past year. Examination proved both testes normal. By rectal palpation the prostate felt normal, but there was a small depressed area at its upper right side over which the rectal mucosa was puckered. Left vesicle could not be palpated. Urine normal in all respects.

5. Man, No. 6017. aged 28. married, 4-i-17. Tuberculosis of seminal vesicle and epididymis. Vesiculectomy; vasectomy; epididymectomy. The vas at the prostatic end was very fragile

and broke several times under moderate traction. No complications. Patient discharged eight days after operation. Result: 23-i-17. The wounds were solid. Patient soon gained weight. He was put through a course of antituberculous hygiene treatment. 27-v-18. Patient came to report. He has been in excellent health since operation. Gained in weight. Has coitus three or four times a week, but wife has not borne a child for six years. Both testes small and somewhat atrophic. Rectal examination normal except for a few small adhesions of mucosa to underlying structures. No urinary symptoms. The urine is normal. Impossible to obtain prostatic secretion by expression for examination.

6. Man, No. 6595, aged 36, married, 12-iv-17. Tuberculosis of epididymis and vesicle; pulmonary tuberculosis. Epididymectomy. Vas cut off at external ring. No complications. Patient was discharged on sixteenth day after operation with sinus not healed. Result: 5-vi-18. Patient died early in 1918.

7. Man, No. 6698, aged 30, 7-v-17. Tuberculosis of epididymis and vesicle. Vesiculectomy; vasectomy; epididymectomy. Impossible to demonstrate any involvement of vesicle or prostate before operation. No complications. Patient discharged twelve days after operation. Result: 7-vi-18. Patient well. Sinus dry since previous October.

8. Man, No. 7468, aged 33, 3-x-17. Tuberculosis of epididymis and seminal vesicles. Left vesiculectomy; vasectomy; epididymectomy. On account of adhesions the whole of the vesicle was not removed. No complications. Patient was discharged one month after entrance. Reëntry: 14-xii-17. Patient has had recurrence of tuberculous process on the other side; general condition bad, and lungs seem to have flared up. 19-xii-17. Right orchidectomy. Complications: Patient made a poor convalescence. Had hectic fever, especially at night, and did not react to forced feeding and antituberculous hygiene. The sinuses were treated with bismuth iodoform petrolatum paste. Patient discharged forty-five days after operation with the sinuses still persisting. Result: 5-vi-18. Patient came to report that he was in a surprisingly good condition, having gained ten pounds since leaving hospital. There was a minute sinus in the right groin and one in the right side of the perineum, but these discharged so little that no dressing was needed. The urine contained a little pus by microscopic examination. Coitus was normal but there was no ejaculated fluid.

9. Man, No. 7266, aged 26, single, 24-viii-17. Bilateral tuberculosis of epididymis and vesicle. Bilateral epididymectomy; vasectomy and vesiculectomy. One side showed more acute process than the other. No complications. Patient was discharged on sixteenth day after operation. Result: 3-vi-18. Patient is at work and in splendid health. Has gained in weight. Coitus normal but not as frequent as before. Testes are of normal size and freely movable in scrotum. The cords are not thickened. By rectum the prostate feels normal. Rectal mucosa somewhat adherent. Urine clear.

10. Man, No. 7376, aged 39, married, 14-ix-17. Chronic epididymitis and chronic orchitis. No operation. Process improved in hospital, and after ten days patient was referred to the Out-Door Department for treatment of posterior urethra. Result: 28-ix-17. The pathologist reported tuberculosis. Under novocaine anesthesia a disorganized left testicle was removed in the Out-Door Department. 23-x-17. Discharged today in excellent condition. No further data.

For a consideration of this subject at greater length, consult: W. C. Quinby, "Treatment of Genital Tuberculosis in the Male," *Jour A. M. A.*, 1918, Vol. LXXI, pp. 1790-1795.

VESICO-VAGINAL FISTULA.

Woman, No. 6670, aged 50, married, 30-iv-17. Vesico-uretero-vaginal fistula, following hysterectomy before entrance. Left nephrectomy. Plastic on fistula. Easy nephrectomy, normal kidney. Exceedingly hard and unsatisfactory plastic high in vagina made difficult because of scar and absence of cervix on which to make traction. No leakage of urine after operation. No complications. Patient was discharged twenty-one days after operation. 16-vii-18. Patient entirely well since operation. 7-x-9. Patient has had no difficulty with bladder since operation.

Society Report.

PROCEEDINGS OF THE NEW ENGLAND BRANCH OF THE AMERICAN UROLOGICAL ASSOCIATION.

(Continued from page 537.)

Ureterovesical Cyst.

Dr. Edward L. Young, Jr.

Before the days of the free use of the cystoscope in the study of urological cases the presence of a ureterovesical cyst was seldom diagnosed during life. It was seen as a post mortem curiosity, or was found by accident during an intravesical operation directed at some other condition. In recent years, with more frequent use of the cystoscope and greater skill in recognizing what is seen thereby, many cases have been reported, though they are still far from common. In 1896 Blumer could collect but thirteen cases from the literature, and most of these diagnoses were made on the autopsy table. In 1906, Adrian collected fifty-two cases, of which only twelve were recognized during life.

Ureterovesical cyst, or ureterocele, is a cystic dilatation of the lower end of the ureter, protruding into the bladder. It may be very small or it may be large enough to cause obstruction to the urinary flow by impinging on the internal meatus, or even, as reported in one case, prolapsing through the female urethra and presenting as a tumor at the external meatus. The shape may vary, though in general it is spherical. The ureter outlet is most often on the summit, but may be at one side of the cyst. It may be of varying degrees of patency, or at the time of observation may be entirely closed. The sac is lined on the outside with bladder mucous membrane and on the inside with ureteral mucosa, with a layer of fibrous tissue between. Some of the reports state that muscle tissue also was present between the two lining membranes. In a few cases stones have been found in the sac. Above the cyst there is always a damaged kidney. If the cyst was the primary damage in the urinary system, the obstruction it causes inevitably results in dilatation of the pelvis and calices, with thinning out of the renal tissue, and, as a rule, when seen there is also an infection present. If the cyst is acquired, the primary pathology may be a ureteral stone which has caused an ulcer just inside the ureter opening before it finally passed out, or an ulcer around the ureteral opening of the bladder mucosa due to any of the various infections common in the bladder.

This condition can occur at any age. It has been found well developed at birth, and a case is reported at sixty-two years of age. From the various accounts it seems to be more common in females than in males; five out of the six cases reported by Caulk were in females. The cysts may be unilateral or occasionally bilateral. From a careful study of his cases, Blumer was convinced that ten out of thirteen were of congenital origin. The occasional association of this condition with other congenital defects has been a strong argument in the minds of a few writers in favor of its congenital origin. Boström and Burchard have advanced the following observation in support of the theory of congenital origin: In certain cases the ureter enters the bladder perpendicularly to its surface without forming a valve of bladder muscle. For this reason the outlet lacks the muscle support ordinarily given, and any obstruction causes it to dilate more readily. Logically this would seem less likely to be the case than the other extreme of implantation, namely, a course so oblique that the last few millimeters run along under bladder mucosa without any muscle over it. In such a case it is easy to see how obstruction would result in dilatation into the bladder. Causes of obstruction in fetal life from epithelial debris have been frequently demonstrated.

Although it is doubtless true that many cases originate in some slight abnormality of the lower ureter, it seems equally true that many cases do not exist until later in life. Yet even in the latter cases it may well be that the combination of acquired damage and anatomical defect must co-exist before such dilatation can occur. It is well proven that strictures at the ureteral outlet appear after the healing of an ulcer due to tuberculosis or the colon bacillus, or to a previous calculus. The obstruction thus formed acts as the starting-point of trouble. One of the cases reported by Caulk was secondary to a ureterovesical anastomosis.

This condition has no characteristic symptoms, and until there is interference with urination from mechanical obstruction, or infection of bladder or kidney, there is no reason to suspect the presence of a cyst. The only possible exceptions to these are those cases in the past history of which there is note of some frequency and indefinite pain in the side. Inasmuch as these cases, when seen, all have some infection, it is not possible to state whether the previous symptoms were due to the cyst alone or to the already existing infection. As a rule, the symptoms are those of cystitis plus pain referred to a damaged and infected kidney, the symptoms varying with the amount of infection or the degree of damage to the kidney involved. Very rarely the cyst has been large enough to interfere with urination.

Diagnosis should be easy with the cystoscope, as there is no other tumor of the bladder of which I am aware that can give the same picture.

The treatment depends on whether the condition is secondary to some other more important renal condition such as renal tuberculosis, calculus, or pyonephrosis, or whether the obstruction itself is the main cause of the trouble. In the first instance, treatment should, of course, be directed to the kidney, and if, as is generally the case, nephrectomy is necessary, the cyst need not be considered further. If a stone is present in the cyst without gross damage to the kidney above, the stone and cyst can be eliminated by the same act. Where ulceration about a ureter mouth, due either to tuberculosis or the presence of a stone, has once been recognized, it is highly probable that later damage may be avoided by careful watch that the ureteral opening does not become strictured, or, if it does become strictured, by gradual dilatation while it is still possible.

In cases where the cyst itself must be dealt with two methods have been used, one being the suprapubic open operation which through the bladder splits the cyst longitudinally and sutures the opening, or excises the cyst and sutures the edge. Watson and Cunningham, on the other hand, believe that reimplantation of the ureter into the bladder is the surest method of getting a permanent cure. If the kidney itself has not been sufficiently damaged to demand attention these operations seem needlessly severe, certainly as a first procedure, and some form of intravesical attack ought to be tried. Various surgeons have slit the cyst either through a cystoscope or, in the female, with an instrument carried through the urethra and used at the same time with the cystoscope. The chief objection to this method, however, is that in most cases the edges reunite, and the last condition of the patient is as bad as, if not worse than, the first. Caulk, in a few cases in the female, excised the sac under the guidance of the cystoscope and got a good result. In the following case which I wish to report I used a procedure differing from any of the above mentioned and in which the result was satisfactory, so far as can be told a year and a half after operation.

Mrs. S., 24. Referred for study because of pyelitis of pregnancy.

Past history: So far as she can remember, has always had frequency of urination. Since the age of fourteen has had several attacks of sharp pain in the left flank radiating into the groin, and during the most painful seizures there was an increase of frequency. She has never noticed blood. General condition has been excellent. During the pregnancy, which was her first, there has been more bother with frequency and burning of urination, and a return of the pain in the left groin, the attacks becoming more frequent and more severe There has been some pain in the right side. Was able to go to a normal delivery without serious trouble.

X-ray showed no evidence of stone, but the outline of a normal sized kidney on the right and less definitely a small kidney on the left. The urine contains macroscopic pus with a growth of colon-like bacilli. Aside from s. p. t. of albumen there was no other abnormality. A total red test showed only slightly diminished function. Cystoscopy easily done, bladder tolerant.

There is in the region of the left ureter a cyst the size of a large plum, which is definitely fluctuant when touched with the catheter. Near the summit is a slightly depressed, elongated area suggestive of a closed ureter mouth, but nothing could be made to break through. From the base of the cyst, diminishing in size toward the summit, are several large blood vessels. Urine from the right kidney contains no pus or organisms. During the cystoscopy there was no evidence that there was any leaking from the cyst, which corresponded to the fact that the examination was made during one of the attacks of pain.

With the scissors through the operating cystoscope an incision was made where the apparent ureter mouth was seen. There was an immediate collapse of the cyst and very shortly a lessening of the pain on that side. For about ten days the patient was comfortable; said she felt better than for some time and claimed to be passing more water in twenty-four hours than before. Then, for about five days there was a period of lessened amount of urine and beginning pain in the left flank. A cystoscopy done at once in the hope of dilating the strictured opening showed that it was impossible to get a catheter into the cyst even at that time. With the fulgurating machine the whole summit of the cyst was burned until the tissue became white over an area, as nearly as could be told, the size of a five-cent piece. Through the centre of this a hole was then completely burned, again with the collapse of the cyst. The same change in symptoms was noted, and the patient was cystoscoped a week later. The cyst was collapsed. No definite stream could be seen to come from the left side, but there was a steady ooze of cloudy fluid from that side. The ureter could not be catheterized. A month later, during which time the patient had no return of the former symptoms, another attempt at catheterizing the left ureter failed. The patient was then lost sight of.

Sixteen months later the patient reported through her husband that she had remained free from attacks of pain, had had less frequency and felt better than she had for many years; so that it is fair to assume that the opening has not closed again, although there is no cystoscopic evidence.

This case does not help as to etiology, inasmuch as the symptoms are consistent with either a congenital cyst with late infection, or with a primary pyelitis of infancy with later stricture and cyst formation. In either event, her future happiness so far as her urinary tract is concerned, depends on how far damage to that left kidney had been carried.

A Case of Fibrinuria.

Dr. Vincent J. O'Conor.

Henry L., a Jewish clerk; age, 57 years, entered the Peter Bent Brigham Hospital on September 1 complaining of backache, dull pain under the right costal margin, loss of weight, and "clotting" of the urine. Family history was not important. His habits were good. There was a history of mild fleeting pain in the left flank for seven years. It was non-radiating and not severe enough to worry the patient. He had been obliged to arise once during the night to urinate, for ten years, but there was no frequency of urination during the day. The present illness began in September, 1918, following a mild attack of influenza, which left him with a frequent irritating, non-productive cough. At this time the physician who examined the urine told him that it was peculiar but did not go into details about the findings. From this time on the patient began to lose weight and had become continually constipated. He would go for several days without a bowel movement, and a resultant abdominal distention and frequent dull discomfort in the epigastrium would be relieved only by vigorous catharsis. In December, 1918, he began to have slight dyspnoea on exertion and more or less general weakness. One month later nocturia increased to three times but there was no frequency during the day and no hematuria, dysuria, or abnormal urine noted.

In April, the patient noted that his urine contained grayish white particles and was somewhat cloudy. He also noticed that the urine became whey-like when standing in a vessel for a few hours. A few weeks after this observation he passed a moderate amount of bright red blood without pain or other associated symptoms. He immediately consulted a physician, who gave him some medicine, and he had no further hematuria at that time.

Early in June the patient began to have a dull "heavy" pain in the right flank and along the right costal margin anteriorly, but this was not severe and caused him no great concern. In the first week in July he consulted a physician because of a slight cough and after a superficial examination was advised to save his urine in twenty-four-hour amounts. He then noted that his single specimens of urine voided into the twenty-four-hour container formed a clear gelatinous layer at times, although there was never a suggestion of blood in the urine. He called this to the attention of the physician who examined the urine and told him he had "too much fat in the urine." Later, at his physician's advice, he underwent a cystoscopic examination and was told that he probably had a stone in the left ureter and that his right-sided pain might be due to the added excretory burden on the right kidney. He continued to lose weight and strength and was unable to work. During this time he was placed upon a fat-free diet and noted no further coagulation of the urine. Two weeks before admission the patient had a severe attack of colicky pain localizing itself in the right groin and over the spine of the pubis on the right. The pain was relieved in three hours, but that night the patient had an attack of hematuria similar to the one in April. In the morning the urine was clear and he has never noted any hematuria since.

A personal communication accompanying the patient stated that he had been suffering from chyluria and that while repeated blood examinations had been made no filarial parasites had been identified. A palpable mass in the right flank was also described. Admission temperature, pulse and respiration were normal. The blood showed 6,400 leucocytes, hemoglobin per cent. 55, erythrocytes 3,500,000. The differential count was normal, and no malarial, no filarial parasites, nor abnormal red cells were noted. The blood Wassermann was negative.

The urine was acid, specific gravity was 1024, a slight trace of albumin was present and occasional red and white blood cells, but no casts. No fat was noted. Phenosulphonephthalein test for two hours showed an excretion of 40%.

Physical examination showed marked loss of weight, sallow complexion but no icterus Heart and lungs were normal. A mass, smooth in outline, firm, and moving on respiration was felt to extend two finger breadths below the right costal margin. No tumor mass could be felt in the right flank, but there was slight costo-vertebral tenderness on deep palpation. The genitalia were normal There was no varicocele present, and rectal examination showed normal findings. The mass palpated was obviously the liver, although there was no increase in the area of liver dulness above the costal margin. The impression obtained at this time led to the examination of the feces and complete Roentgen ray studies of the gastro-intestinal tract. The findings were normal in every respect.

Cystoscopy revealed a normal bladder but on prolonged observation of the right ureteric orifice a small quantity of old blood clot was seen to come from the ureteral opening. Other than this there was no normal orificial contraction and no efflux noted. The left ureteral orifice was normal, with clear urinary efflux. A No. 6 French catheter passed 30 cm. into the left ureter but a No. 5 French catheter was only with difficulty passed 10 cm. into the right ureter. The urine obtained from the left ureter was normal in every respect. There was no flow obtained from the right ureteral catheter. The phenolsulphonephthalein appeared from the left kidney five minutes after intravenous injection and there was an excretion of 25% of the dye in 15 minutes.

Left pyelo-ureterogram was normal after gravity injection of 20% sodium bromide solution. No gravity flow of the opaque fluid was obtained on the right, so 20 c.c. was injected under moderate pressure. The ureterogram showed a tortuous ureter in its lower third, but none of the fluid reached the renal pelvis.

Following cystoscopy it was noted that the bladder specimen of urine, withdrawn at the time of examination, had partially coagulated in the glass. The coagulum made up half of the volume of the specimen and was a clear, grayish white, transparent, gelatinous mass. The coagulum and urine were carefully studied to determine the nature of this substance. There was no chyle or fat present, no albumose or Bence-Jones protein and no mucin. The jelly gave the characteristic tests for fibrin. These are in brief: Insoluble in water, stiffening of the coagulum on boiling, insoluble in alcohol, insoluble in neutral solutions, increase in swelling of coagulum on addition of weak acids or alkalies, gradual dissolution in concentrated mineral acid and subsequent reaction as acid albumin. An occasional leucocyte and erythrocyte were found in the centrifuged specimen.

Urine examination on the three following days showed the presence of fibrin masses and shreds in the urine, but no further spontaneous coagulation of the urine occurred after voiding.

Physical examination now made apparent an indefinite palpable mass in the right flank overshadowed anteriorly by the position of the liver. A diagnosis of neoplasm of the right kidney was made.

Operation was performed on September eleventh under nitrous oxide and oxygen anesthesia. A right lumbar incision was made and a very large nodular right kidney was adherent to the surrounding structures. The tumor mass was removed with some difficulty because of its size and the perirenal fat was removed without incision. The peritoneum was opened posteriorly and the liver found to be normal in size, consistency and position. The wound was closed without drainage and the patient made an uneventful recovery, being up and about in a wheel chair on the tenth day.

The urine, on repeated examinations, after operation, was normal. The phthalein excretion before discharge was 35% in two hours. The patient was discharged on October 11, in good condition, having gained eight pounds since operation.

Pathological report of Dr. S. B. Wolbach:

Gross description: Specimen consists of a right kidney tumor weighing 926 gms. and measuring 12 cm. from pole to pole and 10 cm. from the pelvis outward in the median section. In thickness the measurement is 10 cm., not including a thick layer of perirenal fat, which is very adherent to the surface of the tumor mass. The external surface is smooth, but most of the surface presents rounded, irregular nodules, red in color, with the exception of one that is quite firm upon palpation and white in color. Sectioning through the median line in the mass, the surface upon rough inspection presents no normal kidney structure or substance, the whole kidney being apparently replaced by lobules of spongy and firm tumor cells. On close inspection, however, at both lower and upper poles, there is still a very thin shell of cortex measuring not over 2 mm., which shows definite glomeruli. This small amount of renal tisue extends for only 2-3 mm. along the edge, when it disappears, becoming a mere layer of fibrous tissue which surrounds and apparently bounds the growing tumor cells. The pelvis of the kidney is filled with a mass of fat and nodular tissue which is about 8 cm. long and 2 cm. thick, and in its center there is a small, hard, apparently calcareous mass or nucleus. The entire mass seems to be attached to one side of the pelvis where the lining membrane of the pelvis ends. This membrane is for the most part soft, smooth, and glistening, but there are seen to be small implantation areas of cells. The cut surface of the kidney shows a large, firm, white area about centrally located, measuring 4x5 cm. This area stands out in contrast to the rest of the areas of tumor cells because of its white color and firm structure. The other portions of the tumor, which are definitely localized, separated, and surrounded by white fibrous tissue bands, are red in color, of spongy consistency and have a more medullary and glandular appearance. Tissue from the tumor was fixed in Zenker and a frozen section presents the picture of medullary carcinoma.

Microscopic report: There are sections from four different portions of the tumor stained with eosin, methylene blue, phosphotungstic acid, hematoxylin. The sections present widely different appearances according to the portion of the tumor from which they came. Three of the sections present a somewhat adenomatous structure and are built up of tubules and small cysts with papillary ingrowths lined by columnar cells, most of which are of vesicular outline, due to a marked vacuolization. This portion of the tumor is divided up into larger and smaller nodules by a fairly heavy framework of connective tissue and in some places bands of smooth muscle, the latter possibly derived from the kidney structure (pelvis). The cells forming tubules are supported by a very delicate connective tissue abundantly supplied with capillaries and suggest the renal origin of the tumor. Section stained for fat after fixation in Klotz fixative showed a very slight amount of fat or rather lipoid material, as the color of an occasional granule is pale orange. This portion of the tumor contains small areas of hemorrhage, both recent and ancient. The other portion of the tumor corresponding to the dense, white nodule, noted in the gross, presents a complex appearance. In one portion it is definitely invading the capsule and has the structure of carcinoma with abundant stroma. Other portions present solid masses of rather vesicular epithelial cells with slight tendency toward alveolar formation. The bulk of this portion, however, is composed of spindle-shaped cells accompanied by a small amount of diffusely distributed intercellular substance which stains a feeble yellow with phosphotungstic acid stain and on the whole presenting the appearance of a sarcoma rather than a carcinoma. There seems, however, to be a retransition from the adenocarcinomatous appearance to this structureless portion. The cells of both portions have some features in common, namely, somewhat vesicular appearance and in the size and chromatin content of the nuclei. It is also worthy of note that these sarcoma-like areas contain considerable dark brown granular pigment enclosed within phagocytic cells and my interpretation is that in these sarcoma-like portions we have a simultaneous growth of tumor in fibroblasts in the organization of areas of hemorrhage. Mitotic figures are abundant in all parts of the tumor, particularly abundant in the last described portion.

Comment: Tumor is an adenocarcinoma of renal origin and has in places taken on the characteristics of a more malignant form of carcinoma with a loss of gland-like structures.

Diagnosis: Carcinoma of kidney.

There are two very interesting features about this case, (1) a rather unusual type of renal tumor, (2) the very rare finding of fibrinuria.

Any study of the comparative frequency of the different types of malignant disease of the kidney recorded previous to about 1900 is not only confusing, but apparently impossible. Well authenticated cases of renal carcinoma are so few that it is practically impossible to give any definite data in regard to their etiology.

Morris classes 41 out of 154 renal tumors as carcinoma. Albarran and Imbert, and Tuffier and Brechot state that epitheliomata constitute nearly the entire number of malignant tumors of the kidney in the adult. Roberts reports 67 cases of carcinoma of the kidney, seven of which were bilateral, and Guillet reports 72 cases, seven of which were bilateral. Kelynack reports 37 instances of carcinoma of the kidney, in two of which the involvement was bilateral.

In the light of our present day knowledge of renal pathology these statistics are worthless, as no clear differentiation of hypernephromata from other malignant renal neoplasms is made.

Gareeau, in 1909, found three instances of carcinoma of the kidney in a study of 42 renal tumors occurring at the Massachusetts General Hospital and the Boston City Hospital. Binney recently reports seven cases of carcinoma in 114 reported instances of renal neoplasm.

Spontaneous coagulation occurs very exceptionally in the urine without an admixture of blood. If coagulation of the urine occurs spontaneously, when the urine is allowed to stand, the presence of fibrinogen is always indicated.

Fibrinogenuria is responsible for the clotting of the urine in cases of chyluria due to infection with the *Filaria sanguinis hominis* and is rather frequently associated with this condition. It is not necessary to discuss this fact in the case just reported. There are twenty reported cases of fibrinuria in the literature.

In seventeen instances fibrin coagula were formed repeatedly in the urinary tract before the urine was avoided, and there was no subsequent coagulation of the urine after voiding. In three cases the urine when passed contained fibrin coagula and the urine also coagulated on various occasions after voiding.

In the reports concerning the above cases reference is made to six other cases of fibrinuria not specifically reported in the literature.

In passing, I would like to point out briefly the types of conditions in which fibrinuria has occurred.

Senator, in 1874, makes the first case report in which fibrin coagula appeared in the urine. A woman suffering from acute articular rheumatism was being treated by applying cantharides plasters over several joints. The resultant symptoms were those of an acute toxic nephritis with spontaneous coagulation of the urine. Complete disappearance of all urinary symptoms immediately followed the discontinuance of the cantharides applications.

Baumüller reports fibrinuria in a case which he diagnosed as chronic catarrhal pyelitis. He also reports a personal communication from Koch in which the latter observed fibrinuria in a case of carcinoma of the kidney verified at autopsy.

Von Jaksch reports two cases, one a perinephritic abscess which recovered without treatment and the other a chronic urinary infection which he diagnoses as a ureteritis membranacea.

Klein followed a case of fibrinuria for over four years and at autopsy found a granular nephritis present.

Rothschild reports an instance of sarcoma of the right kidney in which spontaneous coagulation of the urine occurred. Nephrectomy was done successfully and the urine was normal during the p. o. observation.

Mosse, Frank, Gossner, Vogel, Bouchard, and Greig report instances of repeated fibrinuria in what they term catarrhal pyelitis or cystitis.

Furbringer mentions the occurrence of fibrinuria in two cases of nephritis in typhoid fever, both of which recovered from the disease, the urine on repeated subsequent examinations being normal.

Israel in his textbook mentions the occurrence of fibrinuria in a case of neoplasm of the kidney, and Suter states that fibrinuria is a very rare but important symptom in carcinomatous involvement of the urinary bladder. He, however, cites no cases in which this occurred.

Emerson noted spontaneous coagulation of the urine in a case of chronic parenchymatous nephritis four hours before death.

That the fibrin coagula identified in these various types of disease of the urinary tract were chemically and microscopically identical seems evident from the case reports. In the majority of cases the clotting occurred before voiding and coagula were formed in the bladder, ureter, or renal pelvis. In the rarer cases, such as the one I have reported here, the clotting may occur at once after voiding or the coagulum may not be completely thrown down for several hours. The rapidity with which the clotting occurs depends upon the amount of fibrin ferment and lime salts present in the urine. Several early authors have insisted that an alkaline urine is necessary for the coagulation, but both laboratory and clinical evidence shows that either alkaline or acid urine can hold fibrin in solution for a time.

That the fibrin found in the urine in this case was not a product of the carcinoma itself but a result of the associated renal destruction seems evident from a study in these cases. That the small area or remaining renal tissue not involved in the carcinoma should be permeable to such large quantities of fibrin ferment and so few blood cells is an interesting and apparently very rare phenomenon.

DR. TENNEY: I have here a specimen, which was spoken of at the last meeting, a glass thermometer that was taken from a bladder and which had a collection of lime salts around it. It had been in there five months. I don't know why it was put in her bladder. The patient was suffering pain and discomfort and her doctor discovered this thermometer in her urethra and pulled it out.

I took out this large, ureteral calculus last spring, which was close to the bladder, and an interesting thing is that a few weeks ago the man returned complaining of obstruction at the same point where the calculus had been removed. I did not think this occurred so soon where ureteral calculus had been taken out.

DR. QUINBY: How long since it was removed?

DR. TENNEY: As nearly as I can recall, five months. The history of the case was obstruction for 30 years before the calculus was taken out.

(To be continued.)

Book Review.

Radio-Diagnosis of Pleuropulmonary Affections. By F. BARJON. Translated by JAMES A. HONEIJ, M.D., Yale University Press, Publishers. May, 1918.

Dr. Honeij is to be congratulated upon his excellent translation of Barjon's work on the x-ray, and the medical profession of this country, at least that part of it which deals with diseases of the lungs, is likewise similarly to be congratulated upon having such excellent work at its disposal. Not only is the print clear and legible, the book itself of a convenient size and weight, and the photographs of the highest order of excellence, but there is also running through it a vein of conservatism and modesty which is exceedingly rare in the majority of x-ray treatises.

It would appear to the reviewer at least, that many x-ray enthusiasts would do away or endeavor to do away with the clinician or clinical methods. The tone of this book is, however, quite different, as shown by the following, on page 117: "It is not to be assumed that the radiological diagnosis of tuberculosis is to displace clinical examination and auscultation. Radiological examination may often be useful, but may often give no indication. It is not infallible. Certain light, disseminated lesions, insufficient to change the density or the elasticity of the parenchyma may perfectly well pass unnoticed. The radiologist, when not taking into account clinical methods of examination, may very well declare a case of incipient tuberculosis with apparent signs of auscultation to be non-tuberculous. But the same is true of the physician who has relied wholly on clinical methods."

That the author is a firm believer in the value of the x-ray, however, is shown in many ways; for instance, "The time is coming when the information furnished by radiological examination will be as indispensable as that obtained by means of the stethoscope," and . . . . (page xvii) "At once the superiority of this method supersedes all others, for palpation and auscultation give information only as to the condition of those organs which are close to the thoracic wall; auscultation reveals only lesions superficial enough to transmit to the ear perceptible sounds, while the eye can observe lesions that are concealed in the deeper tissues."

In the initial chapter, methods of examination of the normal chest are considered. He then takes up the subject of pleurisy and circumscribed and encysted pleurisy. He frankly admits that in many pleuritic processes, radioscopy is of comparatively little value. As an adjunct to the use of artificial pneumothorax, however, x-ray examination both before and during treatment is indispensable. He urges that radiologists learn to discuss the interpretation of abnormal shadows of the hilus region, which might almost be called the area of romance in the chest.

In his chapter on the enlargement of the tracheobronchial gland, he admits that in adults such enlargement is often due to perfectly innocent infection. In children, however, he believes that tuberculosis is the most common cause. His chapter on the acute infectious pulmonary processes, particularly abscesses and gangrene, is of great value. In tuberculosis of the lungs, he believes that not only is an x-ray examination of value in diagnosis, but that it is also important in following the progress of the individual patient. He admits, however, that in real incipient tuberculosis, clinical examination, history and auscultation signs and symptoms are of more importance than the x-ray.

On the whole, this book is an excellent one and a valuable contribution to our literature on this subject.

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SHORTAGE OF PHYSICIANS.

There is a serious shortage of physicians in the United States and from the number of students in the medical colleges it is apparent that the conditions will grow worse rather than better during the next few years. At the same time the number of quacks is on the increase. Such being the case, it seems that the leaders of medical education should take an inventory and determine, if possible, just what is the cause of the reluctance of young men to enter the profession.

The following story, which is told by a surgeon of note, will illustrate one phase of the question. It appears that his son entered Johns Hopkins some three years ago. At the same time a classmate of the boy went to Baltimore and entered a business house. Now, at the end of three years the first boy finds that he has at least four years before he can begin at the bottom of the ladder, while his friend holds an important position and commands a salary which a physician can attain only after years of hard work. The student recently wrote to his father, "I have a mind to chuck the whole thing. I can sell automobiles as well as he can."

There is no doubt but that a man who has had a premedical training followed by a college course and an interneship is better qualified for the practice of medicine than he who enters the medical college at the completion of his high school course, but it is also true that many of the brightest men do not wish to spend seven or eight years in preparation, and there are many very deserving students who would make excellent practitioners who cannot afford to spend seven or eight years in unproductiveness. These men we lose and their places remain vacant.

Would it not be possible to rearrange the course of study so as to give the student the essentials of his premedical education without taking so much time and money?

Looking beyond the confines of the college and medical school, we find that the practitioners of medicine are roughly divided into progressive and unprogressive; that this division does not depend upon their previous education; that the incomes of the several men are not so much dependent upon their professional skill as upon their business ability. Snap diagnoses, slovenly treatment, and failure to use modern methods in diagnosis and treatment are driving patients from office to office until they arrive at some quack's who has sufficient knowledge of psychology to fool the sufferer.

What we need to overcome this is a limited term for the license that can be renewed only after demonstration that the applicant has kept abreast of the recent developments of medicine. This is a perfectly practical proposition once the majority of the profession realize the importance. As is well known, there was a time when the only attempt at maintenance of a high standard of medical proficiency was made by the Army and the Navy. The standard on entrance was very good but it was learned that after a man passed his second examination many of them progressed no further. To overcome this, about the time state examinations began, laws were enacted which ultimately required that every member of the medical corps, up to and including the lieutenant-colonels, must demonstrate their professional ability before being promoted. The result is that in the medical corps of the Army and the Navy you will find a body of men well read in their profession and alive to modern methods.

Let us strive for a shortened course without lowering the standard and a plan whereby after graduation the practitioner will have to keep up in the branch of medicine he is following.

J. W. BREWER.

MEMBERSHIP IN MEDICAL SOCIETIES.

LAST spring, at a meeting in the City of New York, where a medico-social subject was under discussion, the representatives of the medical profession opposed certain provisions of the proposed legislation. An attorney of the other side asked the speaker what he represented and on being answered, "The medical profession of the state," the retort was that the organized medical profession represents barely one-half of the practicing physicians and therefore the speaker did not represent the profession.

According to the *Journal of the American Medical Association* of May 1, 1920, there are 145,384 practicing physicians in the United States; of these, 83,338, or 57%, belong to the societies of the several states, while the fellows of the American Medical Association amount to 45,266, or 31% of the total number of practicing physicians.

From the same source we find that there are 10,805 physicians in New England; 64.2% belong to the state societies and 36.6% are fellows of the American Medical Association.

As long as such conditions exist it is manifest that the medical profession at large can have but little effect upon legislation even though that legislation vitally affects its members. Divided, we can accomplish nothing; but united, we should be able to exercise a proper supervision over legislation that affects us or the public injuriously.

If the American Medical Association is to represent the profession in this country it should aim to get as near 100% membership as possible. This can be done, but it may require some modification of methods and government. At this time, when all kinds of unwise legislation are being proposed, there is need for a strong association.

Let every county aim to have a hundred per cent. membership before the year is up.

REVIVAL OF HOUSEHOLD INDUSTRIES AND DOMESTIC ARTS FOR RECONSTRUCTION PURPOSES.

THE Society for the Revival of Household Industries and Domestic Arts has found hand spinning, weaving, quilting, and other industries of former days to be of real value in reconstruction work. Wounded soldiers and sailors find the work interesting and not too difficult, and encouraging in the fact that all they can produce is easily sold at good prices. It is the intention of the Society to introduce this work also in state hospitals for the feebleminded, almshouses, asylums, reformatories, and other institutions where the inmates are in need of some light, interesting, and lucrative employment. The hand-made articles of our forefathers never were prized more highly than they are today. In order to extend the work among wounded soldiers and others who may find it helpful, the Society needs additional spinning wheels, reels, heckles, cards, and any other of the old tools which may be stored in our attics and of no value beyond some slight sentimental attachment. These articles could be put to useful service. Teachers are also needed to learn the arts of spinning and weaving, quilting, candle making, tatting, hand-wrought iron work, and other similar industries. Any persons who are desirous of aiding this work among our soldiers may communicate with the Secretary of the Society for the Revival of Household Industries and Domestic Arts, 53 East 44th Street, New York.

ADOPTION OF MEASURES TO INSURE THE REPORTING OF COMMUNICABLE DISEASE.

ALTHOUGH the majority of practising physicians promptly report in most instances the cases of disease dangerous to public health which come to their attention, there still remain a number of physicians who fail conspicuously in fulfilling their obligations in this respect. The futility of endeavoring to control outbreaks of communicable diseases without knowing the infecting source is apparent. In order that the health of the Commonwealth may be preserved by the reporting of dangerous diseases to local boards of health, it has been deemed necessary for the Division of Registration in Medicines of the Department of Civil Service and Registration and the Department of Public Health so to coöperate that compliance with this regulation may be insured. To this end, it has been decided that the names of physicians who do not report cases of diseases dangerous to the public health to their local boards of health shall be furnished to the Department of Public Health. The Department of Public Health will present to the Division of Registration in Medicine of the Department of Civil Service and Registration these names with the proper evidence of neglect to report such diseases. Where it is known positively that the physicians persistently neglect and refuse to report such diseases, a hearing will be granted to the offending physician, giving him the opportunity to show why his license to practise medicine should not be suspended. The protection of the health of the community and of the State demands this action, although it is not to the credit of the profession that such drastic procedure should be necesary.

MEDICAL NOTES.

Study of Botulism in California.—An intensive study of botulism is to be undertaken in California by means of funds raised for this purpose by the olive growers and members of the canning industry. The investigation will be conducted in the laboratories of the Stanford University Medical School and the George William Hooper Foundation for Medical Research of the University of California. The United States Health Service and the California State Board of Health will coöperate in this research, which will include a study of the distribution of the *Bacillus botulinus* in nature, of the ways in which food materials may become infected, and of the steps necessary to destroy the organism when it has infected raw food materials. It is expected that the investigation will cover a period of at least two years.

Italian Journal of Hematology and Serology.—There has been issued recently the first number of *Hematologica*, an Italian journal of hematology and serology, edited by Dr. Ferrata of Naples and Dr. Moreschi of Sassari. It is the purpose of this journal to publish original works in the French, English, and Italian languages. The colored illustrations of the first number, which are furnished to authors without expense, are remarkably good. *Hematologica* deserves the encouragement and collaboration of the American profession.

American Medical Editors' Association.—The following program was presented at the fifty-first annual meeting of the American Editors' Association held at New Orleans, Louisiana, on April 26 and 27, 1920:

Address of Welcome: Dr. Isadore Dyer, *New Orleans Medical and Surgical Journal*, New Orleans, La.

President's Address: "The Nation's Greatest Need: A National Department of Health," Dr. Seale Harris, *Southern Medical Journal*, Birmingham, Ala.

"The State Journal:" Dr. Holman Taylor, *Texas State Medical Journal*, Fort Worth, Texas.

"Medical Journalism: Pedagogy or Advertising:" Dr. Sarah Hobson, *Journal of American Institute of Homoeopathy*, Chicago, Ill.

"Practical Suggestions in the Management of Medical Journals:" Mr. S. Dewitt Clough, *American Journal of Clinical Medicine*, Chicago, Ill.

"Medical Journals and Medical Quackery:" Dr. Oscar Dowling, President, Louisiana State Board of Health, New Orleans, La.

"The Relation of Medical Journals to the Lay Press:" Dr. A. T. McCormack, *Kentucky Medical Journal*, Louisville, Ky.

"Health Insurance and the Public:" Dr. Frederick L. Hoffman, Prudential Insurance Company, Newark, N. J.

"The Place of Cardiology in Current Medical Literature:" Louis F. Bishop. *American Journal of Gastro-Enterology*, New York, N. Y.

"Medical Life Insurance as a Specialty, and Medical Journal Work in Connection Therewith:" Dr. M. M. Smith. Medical Insurance and Health Conservation. Dallas, Texas.

"Medical Journals and Child Hygiene:" Dr. Richard A. Bolt. General Director, American Child Hygiene Association. Baltimore, Md.

"Medical Journals and the Campaign against Cancer:" Mr. F. J. Osborne. Executive Secretary. American Society for the Control of Cancer. New York.

"Medical Journals and the Problems in Social Hygiene:" Dr. Alec N. Thompson, Director, Medical Department. American Social Hygiene Association. New York. N. Y.

"Report of Committee on Necrology:" Dr. C. W. Fassett, *Medical Herald*. Kansas City. Mo.

"Report on Patents and Trademarks:" Dr. F. E. Stewart, *Practical Druggist*, Philadelphia. Pa.

"Plans for Developing the Medical Department of the Army:" Dr. Merritte W. Ireland, Surgeon-General, U. S. Army, Washington, D. C.

"The Public Health Service:" Dr. Hugh S. Cumming, Surgeon-General, U. S. Public Health Service, Washington, D. C.

"The Dissemination of Medical Information to the Medical Corps of the Navy:" Dr. J. S. Taylor, Capt.

Medical Corps, U. S. Navy, Editor, *Naval Bulletin*, Washington, D. C.

"The Internist's Debt to Current Medical Literature:" Dr. Lewellys F. Barker, Baltimore, Md.

"Surgery's Debt to Medical Journals:" Dr. George W. Crile, Cleveland, Ohio.

"Medical Journals and Tropical Diseases:" Dr. Sidney K. Simon, Secretary, American Society of Tropical Medicine, New Orleans, La.

"The National Anesthesia Research Society:" Dr. F. H. McMechan, Secretary, American Association of Anesthetists, Avon Lake, Ohio.

"Medical Abstracts:" Dr. George A. Wilson, Editor, Abstract Department, Tice's Practice of Medicine, New York, N. Y. To be read by Dr. Frank Smithies.

"Medical Abstracts:" Dr. R. H. Sayre, *New York Medical Journal*, New York, N. Y.

"Editorial Writing:" Dr. H. Edwin Lewis, *American Medicine*, New York, N. Y.

"The Elevation of Literary Standards in Medical Journals:" Dr. H. S. Baketel, *Medical Times*, New York, N. Y.

"Medical Journals and Medical Education:" Dr. Charles Cross, *Pacific Medical Journal*, San Francisco, Calif.

"Advertising Ethics:" Dr. A. L. Benedict, *Buffalo Medical Journal*, Buffalo, N. Y.

Medical Service in a Wisconsin Township.—The following interesting account of an experiment proposed by the officials of a township in a county located in the extreme northwestern part of Wisconsin in order to make possible competent medical service to the community has been published in the *Public Health Report* for April 16, 1920:

"It is planned to levy a sufficient tax to provide an annual retainer of $1,000 for a physician who shall practice medicine and surgery in this locality. Furthermore, it is proposed to bond the township sufficiently to provide funds for the erection of a physician's residence, the cost of which shall not exceed $5,000. The physician will be permitted to reside in this dwelling and also to have his office therein without the payment of rent. A suitable garage and barn will also be provided.

"In return for the annual salary of $1,000 and the rent-free residence, office, garage, and barn, the township board reserves the right to prescribe the fees which shall be collected by the physician. Tentatively the charge of $2.00 per call made within the township boundaries, together with mileage at the rate of 50 cents per mile traveled, has been set as the fee the physician shall collect. When a call is made outside the township the charge shall be $3.00, with the same mileage charge. However, $1.00 of each $3.00 fee so charged shall revert to the township treasury. Charges for confinements, operations, and other unusual attendance are to be made in accordance with the county medical society's fee schedule.

"It is the intention of the officials in charge of the project to have the physician act as health officer and serve as medical attendant to the indigent supported by the township. He is also to serve as school physician, making a physical examination of the pupils at least once in three months during the school term. Furthermore, he is to advise the members of the board of health in professional matters."

The practical operation of this plan will be of interest to physicians and rural communities throughout the country.

Botulism in Oregon.—Botulism has been made a reportable disease in Oregon. The attention of local health officers and physicians of the State has been called to the importance of the disease, and they have been asked to state with reports the probable causative food factors. The most conspicuous symptoms of botulism have been described as diplopia, aphonia, ptosis, progressive muscular weakness or tremors with no temperature.

BOSTON AND MASSACHUSETTS.

The Free Hospital for Women.—The Free Hospital for Women in Brookline was organized in 1875 for the purpose of furnishing to women without means free surgical aid and treatment of diseases peculiar to their sex, and treatment in similar cases, without profit to the corporation, to women financially able to pay for the service of the hospital. The forty-fourth annual report contains statistics for the year ending October 1, 1919.

There were admitted to the hospital 925 patients, of whom 613 were operated upon. These figures show a decrease over the preceding year, due to the fact that for two months the hospital was devoted entirely to the treatment of influenza and measles. Fifty-eight influenza patients were cared for. There were performed 1,739 surgical operations, which are listed in the report. Of the patients discharged, 535 were cured, 92 relieved, 277 diagnosed, and 1 unrelieved. There were 19 deaths, 9 of which were due to influenza. The Out-Patient Department conducted 5,539 consultations; there were 1,566 new patients. It was necessary to close this department for three weeks on account of the influenza. The Pathological Laboratory examined 1,563 slides and 1,853 specimens, and made 1,557 urinary and 74 bacteriological reports.

During the time of the war, the post-graduate course given by the Training School was shortened to three months; this proved to be, on the whole, unsatisfactory, and the present class will receive training for six months. Diplomas were given to thirteen nurses for the completion of a three months' practical course, and five nurses received diplomas for the regular six months' course.

Appointment of Dr. Stanley H. Osborn.—Dr. Stanley H. Osborn of Cambridge has been appointed Director, Bureau of Preventable Diseases, of the Connecticut State Department of Health. Dr. Osborn served with the American Red Cross in the Balkans in 1915, combating typhus fever and malaria. In 1915, he joined the Massachusetts Department of Health as a district health officer and in 1917 was appointed epidemiologist, which position he has held up to the present time, with the exception of fourteen months' service overseas in the medical corps of the army during the war.

Conference of the Massachusetts Tuberculosis League.—The sixth annual meeting and conference of the Massachusetts Tuberculosis League was held in Boston on May 6, 1920. Dr. Edward O. Otis, president of the League, delivered the opening address. Dr. Ernest D. Easton, executive secretary of the New Jersey Tuberculosis League, addressed the meeting on "The County As the Unit of Organization for Tuberculosis Work," which was followed by general discussion. Under the general subject of "Case Finding Work" were the following addresses: "Through the State District Nursing Association," by Miss Celia A. Lemner; "Through the City Dispensary," by Dr. Sumner H. Remick; "Through Consultant Service," by Dr. Harry S. Wagner. Discussion of these topics was led by Dr. P. Challis Bartlett and Dr. William J. Gallivan. The subject, "How to put Through a Successful Seal Campaign," was considered by Dr. Robert B. Kerr and discussed by members of the League. Reports from local associations were read on the work accomplished during the past year, and plans and suggestions for the future were considered.

Faulkner Hospital Training School Graduating Exercises.—The graduating exercises of the Training School of the Faulkner Hospital in Jamaica Plain were held on the evening of May 6, 1920. The class of 1920 included 13 nurses.

NEW ENGLAND NOTES.

The Butler Hospital, Providence, R. I.—The annual report of the Butler Hospital, Providence, R. I., for the year 1919, was presented to the Corporation at its sixty-seventh annual meeting. The report is one of exceptional interest, inasmuch as it outlines briefly the development of hospital care for nervous and mental diseases since the year 1868. It is only during comparatively recent years that the subject of prevention of nervous diseases has received any adequate attention. The original purpose of hospitals for the insane was to provide shelter and comfort for those committed to their care. As hospitals have become more numerous, there have been made efforts to investigate the underlying causes of mental disease. In 1868, a pathologist was appointed temporarily by the Utica State Hospital; up to that time the causes of deviations from normal conduct had been enshrouded in mystery. The pathological department of the Utica State Hospital, however, proposed to study bodily secretions and excretions, the state of the pulse as revealed by the sphygmograph, the effect of remedies upon the pulse, the condition of the cerebral vessels as revealed by the ophthalmoscope, the condition of the skin, the morbid conditions developed at autopsy, and to portray them by photographs and photomicography. This work was carried on intermittently until 1886, when it was practically discontinued. The beginning made by Utica was of great value, however, to other hospitals in the country, as it had emphasized the need of more specialized efforts in that direction. It was the pioneer enterprise in a new field and the forerunner of similar departments in other states.

A few years later, the New York State Pathological Institute and the McLean Hospital began to conduct investigations of mental diseases. The examples set by these institutions was followed by others, including the Butler Hospital. In the report for 1919, interesting histories are cited of cases treated in the early forties, when the Butler Hospital began its career; at that time hospitals were concerned more with the custody of the person than with the treatment of the disease. In contrast to these early case records, a modern case history is quoted to show the very different hospital procedure of today.

The annual report contains the following statistics:

There were in the Butler Hospital on Dec. 31, 1918, one hundred and thirty patients, fifty-eight men and seventy-two women. There have been admitted one hundred and thirty-six patients, sixty-six men and seventy women. The whole number under treatment during the year was two hundred and sixty-six, one hundred and twenty-four men and one hundred and forty-two women The maximum number at any one time was one hundred and forty, the minimum was one hundred and twenty-five, and the average weekly number for the year one hundred and thirty and eight-tenths. The discharges numbered one hundred and thirty-two, fifty-five men and seventy-seven women, leaving in the hospital at the end of the year one hundred and thirty-four patients, sixty-nine men and sixty-five women.

Of the admissions seventy-three were residents of Providence, thirty-eight of other parts of Rhode Island, nineteen of other New England States (namely, fourteen from Massachusetts, three from Connecticut, and two from New Hampshire), and six of other states (namely, one from Illinois, one from Maryland, one from New Jersey, and three from New York State).

Of the discharges, one patient was unchanged, twenty had recovered, fifty-five were improved, thirty were unimproved, and twenty-six had died. The causes of death in these cases were as follows: Cerebral embolism, five; broncho-pneumonia, five; cardiovascular degeneration, five; cerebral hemorrhage, four; general paresis, two; carcinoma, one; rheumatic chorea, endocarditis, one; chronic myocarditis, chronic nephritis, one; acute parenchymatous nephritis, one; diabetes mellitus, one. Of the admissions forty-two and two-tenths per cent. were on voluntary application. Among the admissions were fourteen former soldiers and sailors committed to the care of the hospital by the Public Health Service.

Twelve nurses were graduated from the Nurses' Training School in 1919.

New England War Relief Funds.—The principal New England war relief funds have announced the following contributions:

French Orphanage Fund	$586,317.35
American Fund for French Wounded (for the American Hospital at Rheims)	357,784.13
Italian Relief Fund	326,978.90
American Committee for Devastated France	200,857.54

Obituaries.

ELMER ERNEST SOUTHARD, M.D.

In the death of Dr. Elmer Ernest Southard the medical profession has suffered the loss of one of its most brilliant and promising personalities. His short life was one of splendid achievement, devoted to scientific progress and the service of humanity. Dr. Southard was born in Boston on July 28, 1876, the son of Martin and Olive Wentworth (Knowles) Southard. He was graduated from Harvard University in 1897, receiving his medical degree in 1901. After leaving Harvard, he attended the Senckenberg Institute at Frankfort and the University of Heidelberg. In 1917 he received the degree of Sc.D. from the George Washington University. In 1906 he married Dr. Mabel Fletcher Austin of Boston.

Dr. Southard served at the Boston City Hospital as interne and assistant in pathology from 1901-1903, as assistant visiting pathologist in 1904-5, he became instructor of neuropathology at the Harvard Medical School in 1904-5, assistant professor from1906-1909, and had been Bullard professor since 1909. He entered the Massachusetts state service on January 1, 1906, as assistant physician and pathologist of the Danvers State Hospital; he was made pathologist to the State Board of Insanity on May 1, 1909, Director of the Psychopathic Department of the Boston State Hospital in 1912, and Director of the Massachusetts Psychiatric Institute in 1919. He became Director of the Eugenics Record Office, Cold Springs Harbor, New York, and a member of the board of scientific directors of the Bedford Hills Laboratory, Bureau of Social Hygiene, New York. Dr. Southard served as assistant editor of the *Journal of Nervous and Mental Diseases*, the *Psychiatric Bulletin*, and the *Journal of Clinical and Laboratory Medicine*. He was a member of the American Academy of Arts and Sciences, the Association of American Psysicians, the American Medical Association, the Massachusetts Medical Society, the American Medico-Psychological Association, the American Psychopathological Association, the New England Psychiatric Society, the Boston Society of Psychiatry and Neurology, the National Epilepsy Association, and the American Genetic Association. Dr. Southard contributed many valuable articles to medical science, and collaborated in the publication of two volumes, *Neurosyphilis*, in 1917, and *Shell-shock and Neuropsychiatry*, in 1919.

In appreciation of his life and achievement, Dr. Richard C. Cabot has written, in part:

"The state of Massachusetts and Harvard University may both be proud of their share in the career of Dr. Elmer E. Southard; the university, because it first revealed him to himself and linked him with two great personalities whose ideals governed the rest of his life; the State, because it was wise enough and liberal enough to recognize and use his brilliant, fearless and uncompromising spirit during the years 1906 to 1920.

"Unable through boyhood to join in the ordinary sports and interests of his contemporaries because of his physical limitations, he thought of himself as a failure, until he reached college. There he discovered, for the first time, that he could accomplish something by means of his profound and penetrating mind, which hitherto had availed him but little. At Harvard, he came under the influence of Professor Josiah Royce and Professor William James, each of whom fired his enthusiasm and shaped his future activities.

"Out of the study of the brains of the feebleminded, Dr. Southard determined to win better knowledge of the human mind in its highest workings. This was his central interest. 'To utilize the psychopathic by-products of society to its betterment' was his own way of stating it. He believed that out of the study of families containing one mentally abnormal member important help could be gained for the better practice of normal family life. The deepest meaning and secrets of the spiritual life were the centre of his interest; but he hoped to find these through the study of the abnormal.

"Minute microscopic study of the brain occupied his early professional years and led to important discoveries as to the nature of cerebral disease. But with the opening of the Boston Psychopathic Hospital under his directorship, in 1912, he began the study of living minds, not only of the insane but of the law breakers, alcoholics, cranks, tramps, drug habitués, difficult children and other peculiar types brought to the Out-Patient department of that institution by social workers, court officials and friends.

"Through the study of this extraordinary group of sufferers Dr. Southard was led to a deeper and broader idea of what the work of a psychiatrist should be. For in this work he found himself forced to study not merely the defective or abnormal mind, but bodily diseases, the effects of alcohol and morphine, the results of poverty, ignorance, bad teaching and bad environment, and the misfortunes produced by becoming entangled in the meshes of the law. The neuro-psychiatrist fit to understand this huge welter of human misfortune must study and seek to understand his patient from every point of view, mind, body and estate, the influences of home and school as well as those of disease.

"Returning of late years to his root idea of 'utilizing the psychopathic by-products of society to its betterment,' he became enthusiastically interested in the movement for better mental hygiene, which meant for him a reform of education and of morals, a radical regeneration of the human spirit from the point of view of the lessons learned from mental disease. In this new hope he attacked the problems of industry, and with a grant from the Engineering Foundation, began to study the psychology of labor troubles.

"Dr. Southard was the kindest and most considerate of men, never too busy or preoccupied to help others in little ways or to share with them their deepest interests and sorrows. All his professional assistants were also his devoted friends. Their work was suggested, encouraged and forwarded by him in every possible way for he preferred their success and the recognition which it brought to anything directly accruing to himself. Indeed, his own interests, his own profit was the thing that interested him least. He was far too busy to make money. He refused lucrative consultations and high-salaried positions because he preferred to devote himself to research for the good of humanity."

The following letter was sent to Mrs. Southard by Governor Coolidge of Massachusetts:

"It was with a deep feeling of sorrow that I learned of the sudden death of your distinguished husband. It is a loss not only to his family and friends, but to the Commonwealth which he so faithfully served. His life was given in the service of Massachusetts, and as Chief Executive, personally and on behalf of the State, I want to express keenest appreciation of that service.

We all have a just pride in Dr. Southard's achievements. The service he rendered was priceless and will endure for all time. He brought in his great life credit to the University whose name is honored by his work, and credit to all of his many colleagues in the great field of human endeavor. His three years of service in charge of the pathological department in one of our large state hospitals was but an earnest of what he was to do when called to the larger field in charge of like departments in similar hospitals all over the Commonwealth. The psychopathic department of the state hospital, which was a pioneer institution whose foundation was due largely to his energy and foresight, had the good fortune of having him as its director. It became, under his direction, of great value to the Commonwealth and exerted a profound influence upon the policies in this line of work of the other states of the Union. Dr. Southard's labors in directing the work of the Massachusetts Psychiatric Institute embraced the entire work of the Commonwealth in this field of usefulness. His service in the World War as Major in the Chemical Warfare Service made the Psychopathic Hospital of Massachusetts a center of instruction in nervous and mental diseases for those examining officers on whose work and learning depended so much the morale of our armies. By his valued published results and by public addresses, Dr. Southard did much to maintain and extend the leadership of Massachusetts in humane and intelligent care of the mentally afflicted.

Dr. Southard will be missed for his unfailing good fellowship and sense of humor, his keenness to see and quickness to execute, and his sympathetic and practical way of applying science to the common welfare. He possessed in a large degree a trained, learned and capable mind for scientific research. He was indefatigable in his work of helpfulness. Only recently Dr. Southard expressed clearly his estimate of the value of work, when he said: 'Pay dirt is never very interesting, but it is out of pay dirt, washed many times, that the little grain of gold finally comes.' He has builded a lasting monument to his memory, and in the minds and hearts of all his fellow-men he will always be a source of inspiration for those seeking to do the greatest good for the Commonwealth and the nation.

In expressing personally and on behalf of the Commonwealth the deepest sympathy for this great loss that has come to you, I hope that the memories of the great work he was able to do for the human race will be of comfort and strength to you and your family in bearing this affliction.

Very truly yours,
Calvin Coolidge."

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WARREN RANDALL GILMAN, M.D.

Dr. Warren Randall Gilman, a Fellow of the Massachusets Medical Society, died at his home in Worcester, May 2, 1920, after a long illness from malignant disease of the abdomen. He was born in Boston, December 14, 1861, and was graduated from Harvard College in 1884. After taking his M.D. at Harvard Medical School in 1888, he served as house officer at the Boston City Hospital and at the Boston Lying-in Hospital, then settling in Worcester, where he was on the out-patient staffs of the Worcester City and Memorial Hospitals. Dr. Gilman had a general practice and was popular both in the profession and out of it, being president at one time of the Worcester Harvard Club and a member of one of the leading private medical clubs. He is survived by his widow, daughter of Simeon E. Baldwin of New Haven, and a son and daughter. He was a brother of the Rev. Bradley Gilman of Boston.

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ÉMILE POIRIER, M.D.

Dr. Émile Poirier died at his home in Salem, April 29, 1920, at the age of 64 years.

He was born in Canada and graduated from Nicolet College and received his M.D. from Laval University College of Medicine in 1881. Moving from Quebec, he settled in Salem and joined the Massachusetts Medical Society in 1887. Dr. Poirier served on the Salem Rebuilding Commission appointed by Governor Walsh, and belonged to the Massachusetts Medical Society, Massachusetts French Historical Society, Essex South District Medical Society, of which he recently was president, Veragna Council, Knights of Columbus, and the St. Jean de Baptiste Society of Salem.

Dr. Poirier leaves five sons and two daughters. Mrs. Poirier died several years ago.

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Miscellany.

EDUCATION AND RECREATION IN THE ARMY.

By Major General William G. Haan,

Assistant Chief of Staff, and in Charge of Education and Recreation Work in the Army.

That education and recreation as applied to the new Army has passed the experimental stage and is now a vital factor in the training of the soldier was shown at a convention of Army educational officers, held at Camp Zachary Taylor, near Louisville, Kentucky, on December 9, 10 and 11.

Early in the year, the War Department actuated by a deep sense of responsibility felt towards the millions of men brought into the service during the war, as well as by the astounding facts as to illiteracy and physical condition of the young men of the country as shown by draft statistics, and the excellent work done by the Commission on Education and Special Training, had conceived an army built up on a new plan. It was proposed to make the army not only a military force to be trained and ready in time of national emergency, but a great educational institution where young men of the best mental, moral and physical conditions, and with the highest ideals of patriotic citizenship would be produced.

This plan was realized, in a measure, when the Congress appropriated the sum of $2,000,000 to be devoted to this purpose during the fiscal year 1920. Accordingly, in September of this year instructions went forward to the commanding generals of all divisional camps and of territorial departments, who at once appointed on their staffs, officers known as Education and Recreation Officers to assume direct charge of the work. Each officer has associated with him at least one civilian expert in educational affairs, who furnishes assistance and advice in establishing schools and manual training classes.

But it remained for the Camp Taylor Convention, called by the Secretary of War in order that the work in general might be coördinated and rough places smoothed out, to show that the army is now in reality a great training school where the mothers of our young Americans will be glad to see their boys go. This idea of the army as a vast university in khaki is admittedly hard to conceive, but nevertheless the thing has been accomplished right before our eyes.

No longer is an army merely concerned in the making of a recruit into an efficient fighting man, by giving him the prescribed system of military training only for a few hours of the day and leaving him almost entirely to his own resources for the remainder of the day. It now assumes responsibility for the entire twenty-four hours of his day, and sees every portion is gainfully spent in useful study or helpful recreation. In the soldier's life, education and recreation now have equal places with military training, and are definitely scheduled in the programme of daily work.

All training, whether purely military or educational, has as its main object the development of the soldier's mind to make him a responsible thinking human being. Every soldier, however poorly he may be educated, or however limited his experience, has still a thinking mind, and that mind is active practically all the time. Such a man is perhaps incapable at the moment of looking at affairs in a broad sense, but the object of all training must be to guide that mind in the direction of right thinking. In order to accomplish this the instructor himself must be able to estimate about what are the channels of thought in the mind of the men being trained, in order that he may so conduct his own part of the work as to gain the confidence of the men he is instructing or leading.

In developing the soldier's mind the most rapid progress is made by placing upon the man, as early as practicable, as much responsibility as he can stand. This placing of responsibility on the man stimulates his pride, raises his self-respect, and urges him to better effort. This is applicable in all kinds of training. It is character building, frequently called moral training, and the most effective means of stimulating self-development.

Every soldier, down to and including the last recruit, will sooner or later become a leader in a smaller or greater sense. In battle, as battles are now necessarily conducted, direct responsibility very frequently goes out of the hands of the officers, and small groups of men must accomplish objectives by themselves; hence leadership must be assumed by some or all of these men. Any one of them may be placed in a position where he must act independently and make his own decision on his own responsibility, which requires thinking and acting on his own judgment. It requires leadership. And it is to develop these latent qualities of leadership that this educational programme has been inaugurated.

New recruits are inclined to look on their officers from the very beginning with respect and as thoroughly conversant with their duties. It is very important that this natural impression should be maintained and improved, but this cannot be done unless the leaders are in the habit of thinking correctly and justly in all matters, and acting accordingly. This is necessary to gain and maintain the confidence and respect of the men. When it has been fully accomplished, then most of the small difficulties disappear. There will be a high state of morale in the command, and wherever we find a high state of morale we always find a high state of discipline, instruction and consequent usefulness.

Officers of our future armies will be required not only to be thoroughly trained in a professional sense but must also have that human quality which comes only through a real interest felt for the welfare of the men under their command. They must not only be military instructors to the men, but also their leaders in all sports and recreation. Experience of the larger colleges and universities has shown that a certain amount of sport and recreation is a necessary part of the student's life, and as the army is now a great university in every sense of the word, and each man composing it a student, recreational activity will be a part of its training. Here the army chaplain enters as an important factor in the handling by military means alone of all the camp activities formerly furnished by the Y. M. C. A., Knights of Columbus, etc., and the Americanization of aliens in the army.

Under the system of education now in force it is possible for men to receive instruction so as to fit them to be carpenters, blacksmiths, pharmacists, dental assistants, engine workers, mechanics, draftsmen, stenographers, truck gardeners, motor drivers, repair men, telegraphers, radio and telephone operators, etc. Such educational subjects as English, geography, mathematics, United States history and modern languages are also taught. Of course, at the present stage of the game it is not possible to give instruction in all subjects at any one camp or post, but so far as practicable, the desires of the enlisted man as to the courses to be taken by him will be met.

A certificate will be given by the local commanding officer or school officer to each man who successfully completes a course, indicating that he has satisfactorily completed the course studied. A standard War Department certificate will later be adopted, and the possession of such a certificate by a soldier who has been discharged with a character of "Excellent" will be sufficient recommendation to a civilian employer as to the qualifications of the discharged soldier for employment.

On the other hand, it is highly important that the men themselves take the thing seriously and realize that the Government is concerned not only in making trained soldiers of them, but also making of them self-supporting and self-respecting members of the communities to which they will return on discharge.

This work is unique in the history of the Government, and highly important in showing the trend of the army in facing the new problems developed by the World War. It will result in making the army in time of peace a more valuable factor in the life of the Nation by producing men of best possible type, having a good general education, possessing a useful trade, but, above all, thoroughly trained in moral character and the duties and responsibilities of good citizenship.

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The Massachusetts Medical Society.

NEWS FROM THE DISTRICT MEDICAL SOCIETIES.

The Berkshire District Medical Society reports the following Fellows who served in the World War:

Entered Service		
1917	Contract Surgeon, Lt. Vanderpoel Adriance,	Williamstown
1917	Captain Louis D. Barnes,	Lanesboro
1917	Lieut. Michael J. Carroll, (Died at Newport, R. I., Sept. 29, 1918.)	Lenox
1917	Major Robert J. Carpenter,	North Adams
1918	Capt. George L. Curran,	North Adams
1917	Capt. Isaac S. F. Dodd.	Pittsfield
1918	Major Frederic H. Howard,	Williamstown
1917	Capt. Thomas Littlewood,	Pittsfield
1917	Major William J. Lally,	Pittsfield
1918	Lieut. Norman B. McWilliams,	Williamstown
1917	Lieut. Austen F. Riggs,	Stockbridge
1917	Contract Surgeon, Lt. Silas N. Parks,	West Stockbridge
1917	Capt. Harry A. Schneider,	Pittsfield
1917	Major John A. Sullivan,	Pittsfield
1917	Capt. Harry J. Tate,	Pittsfield
1918	Lieut. John B. Thomes,	Pittsfield
1918	Red Cross, Capt. George H. Thompson,	North Adams
1917	Capt. Melvin H. Walker,	Pittsfield
1917	Capt. Charles W. Wright,	North Adams
1918	Red Cross, Alfreda B. Withington,	Pittsfield
1916	British Army, Major Winford O. Wilder,	Pittsfield

On Local Draft Board—Selective Service Law:

District No. 1.	R. Delos Canedy, (Not a member of Massachusetts Medical Society)	North Adams
District No. 2.	Harry B. Holmes,	Adams
District "City of Pittsfield,"	Henry Colt,	Pittsfield
District No. 3.	Clifford S. Chapin,	Great Barrington

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Correspondence.

DUCTLESS GLAND IN U. S. SOLDIERS DURING THE EUROPEAN WAR.

Mr. Editor:

Being interested in material on diseases of the glands of internal secretion in U. S. soldiers in our army camps and at the front during the European War, I should feel much indebted to any physician who has served as a medical officer in the Army during the war, who might be able to supply me with any information in regard to this matter, particularly statistical relations, semeiology, the incidence of those diseases in drafted men and in enlisted men who were subsequently on duty, and the measures taken in dealing with such cases. Any help I may receive in this matter will be highly appreciated and acknowledged.

James Robb Church,
Colonel, Medical Corps, U. S. Army,
Secretary-Treasurer.

The Association of Military Surgeons,
U. S. Army Medical Museum, Washington, D. C.
May 11, 1920.

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NOTICES.

Massachusetts Society of Examining Physicians.—The spring meeting of the Massachusetts Society of Examining Physicians at "Wardhurst," Lynnfield Centre, Mass., on Thursday, May 27, at 6.30 p.m. Dinner, $3.00.

Subject of the evening: "Different Phases of Workmen's Compensation."

Speakers: Dr. Donoghue, Dr. Cotton, Dr. Leonard, Dr. Cornwall, Dr. Schuhmehl, Dr. Marshall, Dr. Phipps, and Dr. Coues.

William Pearce Coues, M.D.,
Secretary.

School Physicians' Meeting.—Dr. Max A. Goldstein of St. Louis, Mo., has accepted an invitation to address the school physicians in the Abraham Lincoln School, Arlington street, Boston, on Friday, May 28, at 4 p.m. The subject of his address will be "The Deaf Child." Members of the medical profession are invited to attend.

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RECENT DEATHS.

Dr. Émile Poirier died at his home in Salem, on April 29, 1920. Dr. Poirier was born at St. Gregoire of Nicolet, Canada, on December 8, 1856, the son of Mr. and Mrs. Esdras Poirier. He was graduated from Nicolet College and received his medical degree from Laval University Medical School of Quebec City.

Dr. Charles H. Newhall died at his home in Newton Highlands on May 11, 1920. Dr. Newhall was born in Lincoln on October 24, 1838, the son of the Reverend Ebenezer Newhall and Sarah Clark Newhall. He served as a surgeon in the Civil War. Dr. Newhall is survived by one sister, Miss Sarah S. Newhall.

The Boston Medical and Surgical Journal

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Original Articles.

THE CLINICAL IMPORTANCE OF ANATOMICAL ANOMALIES IN BILIARY SURGERY.*

By Daniel N. Eisendrath, A.B., M.D., Chicago.

A few years ago the majority of surgeons felt that the occurrence of congenital changes such as malformations, malpositions, and variations in blood supply of the abdominal viscera, was a negligible factor in operations. The intensive development, however, of certain fields of abdominal surgery such as those of the biliary and urinary tracts have made it absolutely necessary for the surgeon to be familiar with every possible alteration of congenital origin in order to avoid errors in diagnosis and operative technic.

The increase in the number of operations for the removal of the gall-bladder has been accompanied by the report of many accidents due to anomalies of the bile ducts and blood vessels of the region. The occurrence of such variations receives either no mention at all or only a brief one in nearly all of our standard works of anatomy and even in those of operative surgery.

The medical student of today is still taught that there are two bile ducts, one from each lobe, which join close to the liver hilus to form the common hepatic duct and this is joined shortly by the cystic duct at an acute angle; that the common duct is a single structure which is formed by the union of the main hepatic and the cystic ducts. Again we have been and still are taught that the cystic artery is a single vessel having its origin from the right hepatic artery shortly after the latter passes behind the main hepatic duct.

The common duct is described as being sufficiently devoid of large blood vessels on the anterior surface of its supraduodenal segment to permit of easy access through an incision in this portion as the operation of choice in the removal of calculi from the common duct.

If the above teaching were correct in 100% (or even nearly so) of the individuals operated upon, the surgeon would not encounter any special difficulties in technic, but recent anatomical studies by Ruge,[1] Kunze,[2] Descomps,[3] Rio Branco,[4] Behrend,[5] and myself,[6] have shown that *a*, the normal angular mode of union of the cystic and hepatic ducts is only present in 75%; *b*, that the cystic artery is a single structure and has its generally accepted origin in only about

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* Read at the February 2, 1920, meeting of the Boston Surgical Society, and at the February 3, 1920, meeting of the Harvard Medical Society, Boston.

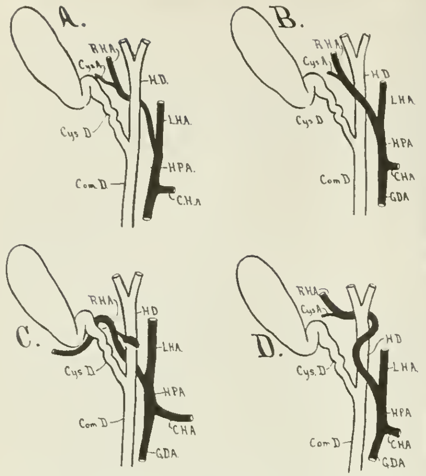

FIG. 1.—Relations of the right hepatic artery to the main hepatic duct.

A. In 70% the right hepatic artery runs behind the main hepatic duct and the cystic artery arises just beyond right edge of duct.

B. In 12% the right hepatic artery passes across front of main hepatic duct before entering right lobe of the liver.

C. In 10% the right hepatic artery runs parallel to the cystic duct throughout its course and lies in close proximity to the neck of the gallbladder before entering right lobe of liver. Artery could be easily injured during cholecystectomy.

D. In 8% the right hepatic artery passes across right edge of the main hepatic duct and then enters liver or forms a ring around the hepatic duct.

The same abbreviations are used to indicate structures in Figs. 1 to 8: R.H.A., right hepatic artery; L.H.A., left hepatic artery; H.P.A., main hepatic artery; C.H.A., common hepatic trunk; G.D.A., gastroduodenal artery; Cys. A., cystic artery; H.D., main hepatic duct; Cys. D., cystic duct; Com. D., common duct.

88%; and *c*, that there are two cystic arteries in 12% of individuals.

You will readily understand why accidents can occur through lack of knowledge of these and similar facts. Jacobson,[7] and Eliot,[8] up to 1918, collected reports of 33 accidents to the ducts during operations on the biliary tract, and I have been able to find 12 more published since the appearance of the above papers.

Let us first review our present information in regard to anomalies of the blood vessels, aided by a study of the accompanying illustrations (Figs. 1 to 7).

Section 1. Variations in the relation of the right hepatic artery to the main hepatic duct.

1A. Normal course. In 70% of individuals, the artery passes beneath the main hepatic duct (Fig. 1) and gives off the cystic artery shortly after it reaches the right edge of the hepatic duct. There is very little danger of wounding such an artery during a cholecystectomy. The possibility of the retraction of the stump of the cystic artery behind the hepatic duct will be readily understood. It is advisable for this reason to ligate the cystic artery as close as possible to the neck of the gall-bladder. I shall refer in the third section to the need of not pulling too hard on the stump of the cystic artery. If it slips out of the grasp of the forceps or the ligature cuts through, the hepatic artery will retract, with its bleeding cystic stump behind the hepatic duct, and the latter be included in the blades of the forceps during the effort to control the hemorrhage.

1B. In 12% the right hepatic artery crosses the anterior instead of the posterior surface of the hepatic duct and then gives off the cystic artery (Fig. 1).

1C. In 10% the right hepatic artery runs parallel to the cystic duct (Fig. 1) and may be easily injured while freeing the cystic duct during cholecystectomy.

1D. In 8% the right hepatic artery arches far beyond the right border of the hepatic duct and then enters the right lobe of the liver as in one of my specimens, or the artery forms a ring (Fig. 1) around the duct. Either variation in-

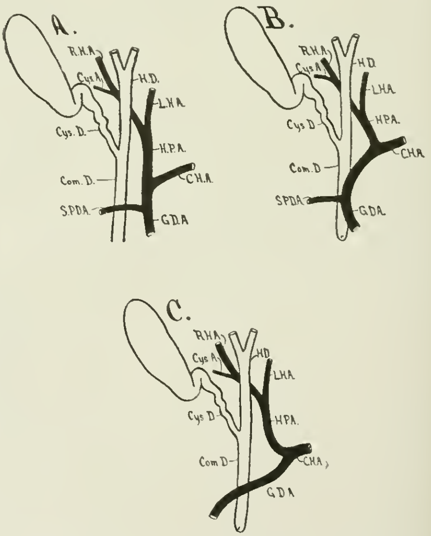

FIG. 2.—Variations of the gastroduodenal artery in relation to the common duct.

A. In 76% a branch of the gastroduodenal artery crosses the common duct.

B. In 38% the gastroduodenal artery arches across the left border of the common duct.

C. In 20% the gastroduodenal artery itself passes across front of common duct.

vites severe hemorrhage during either cholecystectomy or choledochotomy if the vessel receives a tangential injury.

Section 2. Variations of the gastroduodenal artery. These are of especial importance in operations on the common duct but may also be of equal interest if as shown in Section 3, the only cystic artery arises from the gastroduodenal or as in Section 5, such an anomalous vessel constitutes one of two cystic arteries.

2A. In 42%, a relatively large (Fig. 2) branch of the gastroduodenal, *viz.* the superior pancreatic-duodenal artery, crosses the common duct where the latter lies behind the duodenum. I have recently encountered this variation during a choledochotomy and avoided a severe hemorrhage by a knowledge of its presence.

2B. In 38%, the main gastroduodenal artery (Fig. 2) projects more or less over the left edge of the common duct in its retroduodenal portion.

2C. In 20%, the main gastroduodenal artery (Fig. 2) crosses the anterior aspect of the retroduodenal portion of the common duct.

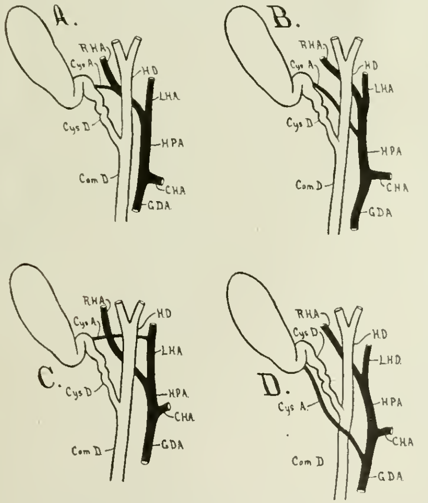

FIG. 3.—Anomalies in the origin of the single cystic artery.
A. There is only one cystic artery in 88% of individuals. In 82% of these it arises from the right hepatic artery.
B. In 3% of the 88% the cystic artery arises from the main hepatic.
C. In 2% of the 88% the cystic artery arises from the left hepatic.
D. In 1% of the 88% the cystic artery arises from the gastroduodenal artery. This is a very important anomaly if the cystic artery is only looked for in its usual place, *i. e.*, arising from the right hepatic.

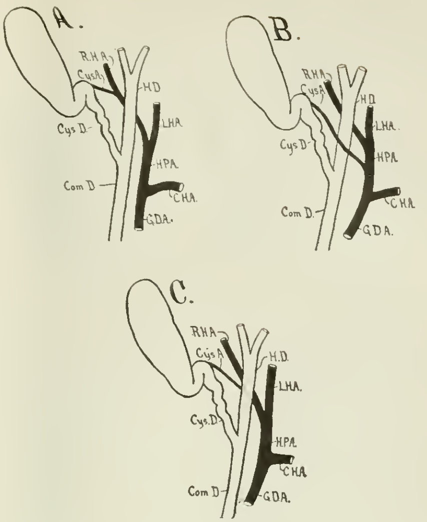

FIG. 4.—Relation of the single cystic artery to the main hepatic ducts.
A. In 71% the cystic artery arises to the right of the main hepatic duct.
B. In 27% the cystic artery arises on the left side of the hepatic duct or common duct and must cross one of these to reach neck of gallbladder.
C. In 2% the cystic artery arises behind the main hepatic duct and if it should be retracted, it is easy to include duct in grasp of forceps.

Section 3. Anomalies in origin of a single cystic artery.

There is only one cystic artery in 88% of individuals, while in 12% there are two such vessels (See Section 5).

3A. Normal course (Fig. 3). In 82.5% of the 88% the cystic artery arises from the right hepatic in the manner described in Section 1A.

3B. In 3% of the 88% of cases with a single cystic artery, the latter arises from the main hepatic artery (Fig. 3).

3C. In 2% of the 88% of cases with a single cystic artery (Fig. 3), this vessel arises from the left hepatic artery.

3D. In 1% of the 88% of cases with a single cystic artery (Fig. 3), the vessel arises from the gastroduodenal artery and crosses the common duct obliquely to reach the neck of the gallbladder.

The importance of this last named anomaly is far greater than those referred to in 3B and 3C. If one has clamped or ligated the pedicle in a cholecystectomy and was under the impression that the cystic artery had been included, a severe hemorrhage might occur, as in one of my

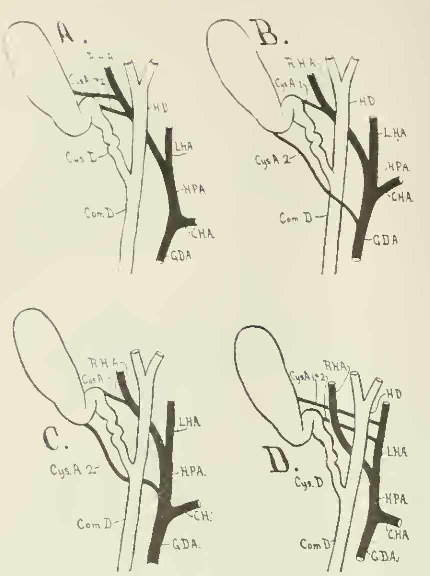

FIG. 5.—Various modes of origin of double cystic arteries.
A. In 8% of the cases having two cystic arteries, both vessels arise from the right hepatic artery.
B. In 2% one artery arises from the right hepatic and the other from the gastroduodenal artery.
C. In 1% one artery arises from the right hepatic and the other from the main hepatic (hepatica propria) artery.
D. In 1% both vessels arise from the right hepatic artery.

own cases, by overlooking such an anomalous vessel.

In 3B and 3C a retracting bleeding cystic artery stump may give considerable annoyance in searching for the vessel if one does not bear in mind such anomalous origins of the vessel.

Section 4. Relation of a single cystic artery to the main hepatic duct.

This is of the utmost importance in cholecystectomy especially if the operator attempts to ligate the cystic artery close to the hepatic duct. If the vessel should retract behind the duct while bleeding, it is easy to see how a blind thrust of the blades of an artery forceps could include the hepatic duct.

4A. In 71%, the cystic artery (Fig. 4) arises close to the right edge of the hepatic duct. This is generally taught to be the condition in every individual.

4B. In 27%, the cystic artery (Fig. 4) arises to the left of the hepatic duct and crosses its anterior surface to reach the neck of the gall-bladder.

4C. In 2%, the artery arises (Fig. 4) from the right hepatic while the latter lies behind the hepatic duct. The retraction of such a vessel while bleeding offers a difficult problem to secure it for purposes of ligation without injury to the duct.

Section 5. Two cystic arteries. Rio Branco found this condition in 12% of his dissections, while Descomps believes that 18% is more accurate. At any rate, it occurs often enough to cause the surgeon to be on his guard and not to be satisfied with the ligation of one cystic artery until he has assured himself that a second one does not exist.

5A. In 8% of the 12%, both cystic arteries (Fig. 5) arise from the right hepatic.

5B. In 2% of the 12% (Fig. 5), one cystic arises from the right hepatic and the other from the gastroduodenal artery. This anomalous origin of the second vessel would seem to me to offer the greatest possibility of damage to the common or hepatic ducts in the effort to control bleeding.

5C. In 10% of the 12%, one artery (Fig. 5) arises from the right hepatic and the other from the main hepatic.

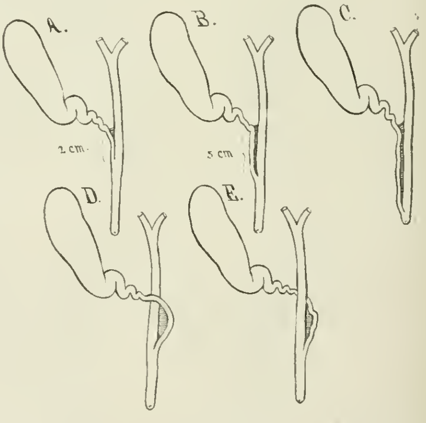

FIG. 6.—Variations in the mode of union of the cystic and main hepatic ducts.
A. Normal (75%) unite at acute angle. Terminal 2 cm. paralled and firmly held together by fibrous tissue.
B. Short parallel type. Parallel for 5 cm. or more as far as upper border of pancreas.
C. Long parallel type. Parallel almost throughout course, *i. e.*, to within ½—1 cm. from ampulla of Vater.
B. and *C.* together occurred in 17%.
D. and *E.* Anterior and posterior spiral types occurred in 8%. Note how cystic duct winds around anterior (or posterior) surface of the hepatic duct to enter its left border.

5D. In 10% of the 12%, both cystic arteries (Fig. 5) arise from the left hepatic.

Variations in the bile ducts.

These are of the utmost importance to the surgeon, but even the internist cannot afford to be ignorant of the presence of such anomalies, as I will try to show later. The pioneer in the investigation of this subject was E. Ruge in 1908, although a brief reference was made to parallelism of ducts by Delbet at a meeting of the Paris Surgical Society in 1905. Ruge reported the results of his examination of 43 bodies, and his observations were corroborated in the main by those of Kunze with 39, and Descomps with 50 examinations. In order to study the question upon a still larger scale, I examined the biliary tract in 100 autopsies at the Cook County Hospital and have reported my results in a previous paper. When compared with the results established by Ruge, Kunze, and Descomps, it will be seen that my observations agree most closely as to the frequency of the different types of anomalies with those of Descomps. Kunze was not able to find any examples of the spiral type

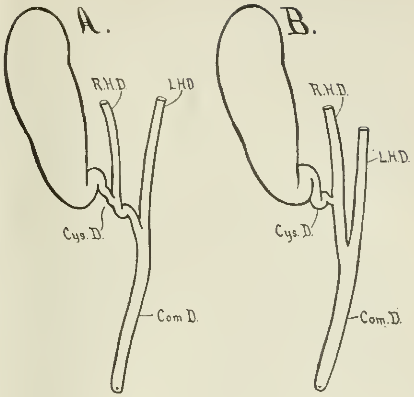

Fig. 8.—Anomalies in the right hepatic duct.
A. Right hepatic duct (R.H.D.) empties into the cystic duct (Cys. D.).
B. Cystic duct (Cys. D.) empties into the right hepatic duct (R.H.D.).

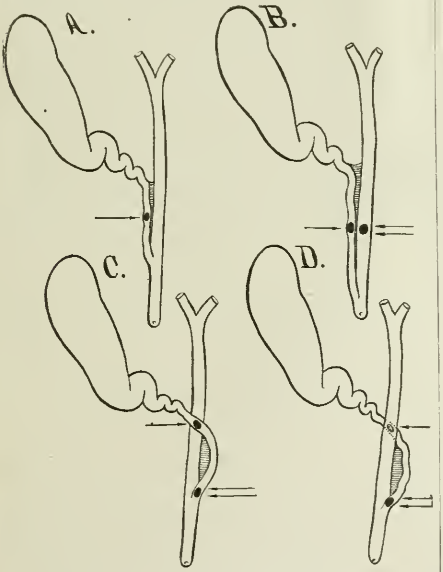

Fig. 7.—Possible locations of calculi in cases with anomalies of the mode of union of the cystic and hepatic ducts.
A. Calculus in cystic duct of short parallel type. Can compress hepatic duct and cause same symptom as calculus in that duct.
B. Calculi in long parallel type of ducts. Could cause great technical difficulty in removal, with possible injury of ducts.
C. Calculi in spiral cystic duct. Very puzzling clinical picture if one (single arrow) compressed hepatic duct and other obstructed a cystic duct (double arrow) emptying into hepatic duct on its left side.
D. Similar possibilities from clinical and operative standpoint as in *C.*

Frequency of Modes of Union of Cystic and Hepatic Ducts.

Type of Union	Normal Angular	Parallel	Spiral
Ruge*	14 (33%)	12 (29%)	16 (38%)
Kunze†	20 (51%)	19 (49%)	
Descomps‡	40 (80%)	6 (12%)	4 (8%)
Eisendrath§	75 (75%)	17 (17%)	8 (8%)

* 43 observations, † 39 observations, ‡ 50 observations, § 100 observations.

Let us now consider briefly these types in detail as well as other variations in the number and course of the extrahepatic bile ducts.

Section 6. Variations in the course and mode of union of the cystic and hepatic ducts.

6A. Normal angular type (Fig. 6). This is the mode of union which we have been accustomed to think existed in every human body. In view of the above observations by various investigators, we must be ready to drop the older conception in favor of the more recent one. The cystic unites with the main hepatic duct in approximately 75-80% of individuals at an acute angle and in its terminal portion the two ducts are most intimately held together by firm connective tissue for a distance of 2 cm., an observation already made by Poirier in 1896. Another fallacy which must be dropped is that it is possible to pass a probe through a normal cystic duct into the common duct unless the cystic duct has been artificially dilated by a stricture or calculus so that its valves, which act normally as an obstruction to the probe, are flattened against the wall of the cystic duct.

6B. Parallel type. The cystic and hepatic ducts may run parallel to the upper border of the duodenum or even to the pancreas so that there is an absence of a supra or even of a retroduodenal portion of the common duct. To this brief course (usually about 5-7 cm.) of parallelism of the cystic and hepatic ducts (B in Fig. 6) I have applied the term "short parallel" to distinguish it from a much more extensive parallelism, the "long parallel," in which as some of my own specimens show, the cystic and hepatic ducts pursue a parallel course to within a short distance (1/8 cm.) from the ampulla of Vater (C in Fig. 6). An important fact from the standpoint of surgical technic is that the two ducts (both in the long and short parallel types) are held firmly together by strands of fibrous tissue. The parallel type occurs in about 17% of individuals.

6C. Spiral type. The cystic duct, instead of emptying into the hepatic duct on the right side of the latter, winds around it a quarter, half, three quarters or even a full circle. I found this variation in 8 of 100 bodies, and have applied the term anterior spiral (D in Fig. 6) to those cases in which the cystic passes across the front of the hepatic duct for one (C and D in Fig. 7) or more fourths of a circle. If the cystic duct (E in Fig. 6) winds around behind the hepatic duct, the term posterior spiral seems most applicable. This spiral type was found in relatively larger proportion by Ruge (16 in 43) than by either Descomps (4 in 50) or myself (8 in 100).

Clinical importance of the parallel and spiral types.

The intimate relations and anomalous course of the two (cystic and main hepatic) ducts in both of these variations explain some of the accidents which have occurred during both cholecystectomy and choledochotomy. Again one can see (Fig. 7) how a calculus could press upon the common duct if it was lodged in a cystic duct which was either parallel to or pursued a spiral course around the main hepatic duct. In a similar manner a calculus lodged in the hepatic duct might easily be mistaken for one lying in the cystic duct and an accident occur if the duct were too widely incised in the removal of the calculus.

Section 7. Variations in the hepatic ducts. I have never encountered these in my dissections but they have been found by Ruge, Descomps, Kunze, and Kehr.

7A. The right hepatic duct (Fig. 7). This may empty into the gall-bladder at its liver bed or it may empty into the cystic duct, or again the latter may open into the right hepatic duct.

The accidents which might occur during operation from any of the above variations can be easily visualized.

7B. Accessory hepatic duct. Descomps found that a small accessory hepatic duct occurred in 12% of bodies examined by him. It either enters into the right hepatic duct, or at the point of junction of the right and left hepatic ducts, or into the main hepatic duct, or finally into the cystic duct close to its junction with the main hepatic duct.

Space will not permit of more than a brief enumeration of two deviations from the normal of the gall-bladder and cystic duct which have played a part in accidents during cholecystectomy. I refer, *a*, to a very short cystic duct permitting the hepatic duct to be easily pulled out of its course so that the junction of the cystic, hepatic, and common ducts can be easily resected; *b*, to a gall-bladder with its pelvis on the upper side, firmly adherent to the hepatic duct, so that it is easy to pull the wall of this duct during removal of the gall-bladder.

REFERENCES.

[1] E. Ruge: Arch. f. klin. Chir., 1908, lxxxvii, 47.
[2] Kunze: Beitr. z. klin. Chir., 1911, lxxii, 491.
[3] Descomps: Bull. Soc. Anat. de Paris, 1910, lxxxv, 328; and Monograph on Anomalies of the Coeliac Axis, G. Steinheil, Paris, 1910.
[4] Rio Branco: Monograph on Anomalies of the Coeliac Axis, G. Steinheil, Paris, 1912.
[5] Behrend: Annals of Surgery, 1918, lxviii, 32.
[6] Eisendrath: Jour. A. M. A., lxxi, 864 (Sept. 14, 1918).
[7] Jacobson: Amer. Jour. Obst., 1914, lxx, 948.
[8] Eliot: Surg., Gynec., and Obstet., 1918, xxvi, 81.
[9] Kehr: Surgery of the Biliary Tract, Vol. i, 1913.

CAESAREAN SECTION UNDER LOCAL ANAESTHESIA COMBINED WITH MORPHINE AND SCOPOLAMINE NARCOSIS.

BY FREDERICK C. IRVING, M.D., BOSTON.

IN certain of the graver complications of pregnancy the selection of the method of delivery and of the anaesthetic demands very careful judgment on the part of the obstetrician. In many instances the vital interests of the mother require that pregnancy be terminated.

We must see to it, however, that the means we adopt to deliver the patient do not bring about a fatality or chronic invalidism and thus directly result in what we are trying to avoid.

Among the complications of pregnancy in which we often must face this situation are cardiac disease where there has been one or more breaks of compensation, and some cases of cardio-renal disease, nephritis, diabetes and tuberculosis of the lungs. Our problem here is to remove the foetus by the method calculated to disturb least the vital processes of a very sick patient. With this in view we must select a procedure which carries with it a minimum of shock and we must choose an anaesthetic which not only produces no poisonous or irritant effect upon organs essential to life but which causes the patient the least possible mental or physical distress.

In the writer's opinion Caesarean section under local anaesthesia combined with morphine and scopolamine narcosis accomplishes this end more safely and almost as easily as any means at present at our disposal. The writer does not advocate it as a routine method of delivery in cases requiring Caesarean which are otherwise normal since with them a general anaesthetic will do no harm, nor does he by any means approve of "twilight sleep" in normal labor. In these cases nitrous oxide and oxygen analgesia will accomplish more than was ever claimed for "twilight sleep." Caesarean section under local anaesthesia combined with morphine and scopolamine should be reserved for those cases in which we wish to avoid the pain and physical exertion of labor, the possible shock of an operative pelvic delivery, and the danger of a general anaesthetic.

For purposes of treatment patients with heart disease during pregnancy may be divided into two classes: (1) those who have never suffered a break in compensation and (2) those who have. The first class may usually be treated under constant observation during pregnancy along general medical lines. Provided there is no malposition or no disproportion between the baby and the pelvis such patients may be allowed to go into labor and to complete the first stage. The use of morphine and other sedatives, except chloral, during the period of dilation is advisable in order to make labor as easy as possible. After full dilatation of the os the foetus should be extracted with forceps under carefully administered ether anaesthesia to save the patient the muscular effort of expulsion. It is unwise to drive through a hard second stage a patient who has already used part of the reserve force of her heart in providing compensation for damaged valves. We never know when the limit of cardiac response has been reached. The indication is, therefore, to make labor so easy that the reserve force of the heart may be drawn upon to the least possible degree.

Newell takes the view that even the first stage of labor in cardiac patients who have never been decompensated may produce enough damage to shorten materially their lives. He is, therefore, inclined to deliver them near term by Caesarean section unless the first stage, by reason of multiparity or other causes, bids fair to be short and easy.

The second class of cardiac patients presents a different problem. Here there have been one or more attacks of decompensation either before or during pregnancy, and the cardiac reserve has been overdrawn on one or more occasions. In these cases even the first stage of labor may prove disastrous. A number of deaths occur days, even one or two weeks, after the successful completion of labor and at a time when the obstetrician has begun to hope that the danger is over. If decompensation of any considerable degree has occurred during pregnancy and the patient is reasonably near term so that there is an opportunity to obtain a living baby we should bring about the reëstablishment of compensation if possible and then effect delivery before another break occurs. Delivery during decompensation is too dangerous to attempt by any method. Should a serious break in compensation occur in early pregnancy the safety of the mother demands that the life of the child, at best problematical, be disregarded. A break in early pregnancy indicates that other and more serious attacks of decompensation are likely to follow, any one of which may prove fatal. From the practical standpoint it should be remembered that even if the patient should survive several failures of compensation there is great danger that during one of these periods the foetus may die of asphyxia *in utero* from faulty oxygenation. It is consequently bad policy to jeopardize the life of the mother for that of a child which may be lost in so doing.

F. G. Brigham believes that cases of myocardial diseases characterized by absence of any demonstrable valvular lesion and a total lack of response to digitalis medication should be delivered whenever their condition warrants it, regardless of the period of pregnancy. These cases are markedly lacking in cardiac reserve force and do badly under any form of treatment if allowed to go near term.

Caesarean section offers the best solution in cardiac disease where decompensation has occurred because it is attended by a minimum of shock and because by its employment the stress and strain of labor are avoided. It also gives an opportunity to sterilize the patient should it be advisable, which it usually is. The chief objection to Caesarean is that, even more frequently than after most laparotomies, it may be followed by intestinal distention and by dilatation of the stomach, both of which, but particularly the latter, may prove disastrous to an already embarrassed heart. These complications may be avoided by attention to three details. These are: (1) the use of the low abdominal incision, entirely below the umbilicus. In this way the stomach and intestines do not come into the field at any stage of operation. (2) the close approximation of the uterus to the abdominal wall by the hands of two assistants, who exert firm pressure exteriorly against the patient's flanks until the uterine contents have been completely evacuated. In this way the spilling of liquor amnii and blood into the peritoneal cavity is largely avoided. (3) The avoidance of gauze packs, either wet or dry. The forcing of gauze between the parietal peritoneum and the uterus causes considerable peritoneal irritation. Unless it is most carefully applied it also defeats its own ends as it tends to separate the abdominal wall from the uterus and allow fluid to run into the peritoneal cavity.

Having considered the advisability of Caesarean section for patients who have had cardiac decompensation our attention is next directed to the choice of anaesthetic. Chloroform may, of course, be dismissed without discussion as it is a direct cardiac poison. Concerning ether and its effects upon the heart there is a considerable diversity of opinion among pharmacologists and anaesthetists. Cushny maintains that under a toxic dose of ether the heart beats are slower and weaker. Tyrode states that it does not directly stimulate the heart. On the other hand Hare says positively that ether as usually given for anaesthesia is a cardiac stimulant and that it increases the force and rate of the pulse, a belief in which he is sustained by Gwathmey and Butler. Unlike chloroform, ether, according to Gwathmey and Cushny, never causes inhibitory arrest of the heart at the beginning of anaesthesia. The most intelligent opinion upon the effect of ether as a cardiac stimulant appears to be that of Meyer and Gottlieb who quote the work of Bock upon animals in which the heart was isolated from the central nervous system. In such animals the administration of ether produced no result upon the force of frequency of the heart beat, thus proving that any apparent stimulant effect was due to a reflex action and not to any direct influence of the anaesthetic upon the cardiac muscle.

From the practical point of view the thing about ether which concerns us most is not its lack of toxicity or its stimulant properties, but the difficulty of its administration to a cardiac. Patients suffering from severe heart disease are characteristically nervous and apprehensive. Anything that disturbs them will send their pulse up a number of beats per minute. The psychic element comes strongly into play. Our experience with them at the Boston Lying-in Hospital has been that they are apt to be querulous and difficult to manage. They do not make good ether patients. So far as their nervousness and mental attitude are concerned there is a certain resemblance to hyperthyroidism. Lahey's success in operating on exophthalmic goitre under local anaesthesia combined with morphine and scopolamine has led the writer to employ the same method with this class of cardiacs. Ether is apt to cause irritation of the respiratory passages in these patients, who in addition often have a certain amount of oedema of the lungs. Spasm and cyanosis are likely to result, which deprive the heart of oxygen and increase the load under which it has to work by raising the blood pressure. There is a real danger of sudden death at this time. Failure to maintain an open airway will produce the same disastrous effect. Even the use of preliminary medication and the exercise of the greatest possible care cannot always prevent this most unhappy result.

Nitrous oxide and oxygen is pleasant to take, rapid in action, produces no tissue changes in the body and is almost immediately eliminated. However, the borderline between anaesthesia and even slight asphyxia is so narrow that a patient suffering from severe heart disease should not be allowed to take the risk attendant upon it.

Spinal anaesthesia, aside from its own inherent dangers, presents the obvious disadvantage that the patient is fully conscious. For a nervous, apprehensive cardiac to be present mentally as well as physically at a Caesarean section performed upon herself would be most distressing to her.

Paravertebral anaesthesia combined with morphine and scopolamine narcosis as practiced by Siegel is cumbersome and the technic difficult. Local anaesthesia accomplishes the same result in much less time and with the greatest ease and simplicity.

As regards diabetes, Joslin states that albumin and casts are apt to appear in the urine after confinement, and he suggests that the discovery of renal elements during pregnancy may raise the question of Caesarean section. The administration of ether is apt to result in acidosis. Caesarean section either by the method here described or under gas and oxygen anaesthesia provides an appropriate method of terminating pregnancy in those cases where it is not advisable to await spontaneous delivery.

The experimental work of Kemp upon the dog showed that ether produced a marked contraction of the renal vessels without a general increase in peripheral blood pressure. The secretion of urine was thereby lessoned and was occasionally completely arrested, or such injury was caused the kidney that albuminuria or hematuria followed. This would indicate that ether in nephritis or cardio-renal disease may do distinct harm. Should a high blood pressure be present nitrous oxide and oxygen is also contraindicated. Many children are lost in nephritis complicating pregnancy from placental infraction by waiting too long before delivery is effected. In selected cases after viability has been reached Caesarean section by the method mentioned offers an improved prognosis for mother and infant.

In certain cases of pulmonary tuberculosis, especially where it is desired to sterilize the patient, or when it is considered advisable to save her the possibility of a long exhausting labor, Caesarean section under local anaesthesia combined with morphine and scopolamine offers an effective means of accomplishing the desired end. It has also been used most satisfactorily in a case of bronchial asthma.

The technic of operation is simple but careful attention to detail is of absolute importance and will determine the difference between success and failure. No preliminary cathartic is given. The patient receives a low enema the morning of operation. Her ears are plugged with cotton to keep out extraneous sounds. While she is still in bed, which should, if possible, be on the same floor as the operating room, she is given 1/6 grain of morphine and 1/200 grain scopolamine subcutaneously. The morphine is never repeated. The same dose of scopolamine is repeated at 40 minute intervals until the patient is quiet and dozing. Three doses of scopolamine are usually necessary to produce the desired result, but as much must be given as is necessary. When the patient is in this condition a folded towel is placed over her eyes and she is transported gently and quietly to the operating room. The operation is begun when the patient is asleep but under no circumstances before. Just previous to beginning the operation a final 1/200 grain of scopolamine is administered to carry on the narcosis. No talking is permitted in the operating room and the rattling of instruments and basins is carefully avoided. A nurse sits by the patient's head and takes her pulse at regular intervals. Speaking to the patient is absolutely forbidden. She lies upon the operating table without any restraint whatever, and should she move her arms or legs during the operation no one attempts to control her.

The surgeon marks the length of the abdominal incision upon the skin between the pubis and the umbilicus with a needle scratch. Then using a hypodermic syringe with a fine sharp needle he infiltrates the substance of the skin under this line with 1% novocain or procain. He proceeds deliberately, being careful to keep the point of the needle in the skin itself so that a series of wheals is the result. He then makes a series of punctures downward through the infiltrated skin with a larger needle and syringe, arresting the point of his needle when the resistant fascia is reached. In this way he anaesthetizes the subcutaneous tissue and partially infiltrates the fascia. After waiting ten minutes by the clock he divides the skin and subcutaneous tissue down to the fascia. If at any stage of the operation the patient gives evidence of feeling pain more local anaesthetic is injected and no further operating is done until it has taken effect. The fascia and peritoneum are now infiltrated in turn and divided. The uterus presents under the incision and is approximated to the abdominal wall by the method already described. One ampoule of pituitrin is now injected into the uterine muscle. The uterine peritoneum and muscle are insensitive, so it is not necessary to inject any local anaesthetic. The uterus is incised, the incision being carried down to the membranes first in its lower portion to avoid encountering the placenta and is then completed with scissors. The membranes are now ruptured, the operator's hand cautiously inserted into the ovum and the anterior leg gently grasped. The child is slowly and carefully extracted and the cord clamped and cut. All tearing of tissue or rough handling must be avoided. Speedy and spectacular operating is most out of place here. Both the abdominal and uterine incisions must be amply large to allow the easy extraction of the child.

Having disposed of the baby the operator inserts his fingers into the upper angle of the uterine wound and gently delivers the uterus through the abdominal incision. Then and not before the assistants are allowed to remove their hands from the patient's flanks. One or more sterile towels are wrapped around the lower portion of the uterus and secured with clamps. The placenta and membranes are removed and the uterus sutured in the usual manner. If it is desired to sterilize the patient the proximal 1½ inches of the mesosalpinx is infiltrated with local anaesthetic just below the tube. The tube is tightly ligated 1 ½ inches from the uterus and the proximal portion excised, including its uterine insertion. The distal cut end is now buried between the folds of the mesosalpinx, which are brought together with a running stitch. The elliptical incision in the uterine cornu left by the excision of the tube is closed by sutures. The same process is repeated on the other side and the uterus returned to the abdominal cavity. Suture of the abdominal wall is carried out in the usual way. One should, however, avoid picking up the parietal peritoneum in hemostats or pulling upon it in any way, as such traction causes intense pain and is sure to arouse the patient. Packing of gauze into the peritoneal cavity will produce the same effect. It may be necessary to inject more local anaesthetic into the skin before it is sutured.

In the cases operated on by the writer according to this technic or in those which have come under his observation there has been an entire absence of operative shock. The patients have been returned to bed in no worse condition than when they left and there have been no maternal deaths. All have either been entirely unconscious of what was going on at the time of operation or else have had a very hazy idea of it. With the exception of one child, which was dead at the time of operation, there have been no foetal deaths. The full term infants have cried promptly at the time of delivery, more vigorously, in fact, than after Caesarean under ether anaesthesia. The premature infants have required considerable resuscitation. The method is doubtless applicable to other conditions than those mentioned. In eclamptic primiparae with rigid cervices it may have a distinct field of usefulness.

SUMMARY.

(1) Caesarean section under local anaesthesia combined with morphine and scopolamine narcosis is a useful and successful method of delivery in some of the graver complications of pregnancy. Among these are cardiac disease where one or more attacks of decompensation have occurred, diabetes, nephritis and cardiorenal disease, pulmonary tuberculosis and bronchial asthma.

(2) In general, it finds its application in those cases where we wish to avoid the pain and physical exertion of labor, the possible shock of an operative pelvic delivery, and the danger of general anaesthetic.

(3) Plenty of time must be allowed for both the general medication and the local anaesthetic to act.

(4) Deliberate operating, with studious avoidance of roughness, is essential to success.

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SOME SURGICAL ASPECTS OF SYPHILIS.*

By William Pearce Coues, M.D., Boston.

The seed of our present day knowledge concerning the surgical aspects of syphilis comes from the work of three great Old World scientists, Virchow, Alfred Fournier, and Sir Jonathan Hutchinson.

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* Read at a meeting of the Out-Patient Staff of the Massachusetts General Hospital, March 12, 1920.

With all the recent intensive study of syphilis which has been carried out during the past few years, and which through refined methods of diagnosis has brought to light the great amount of unrecognized syphilis in communities, it is indeed strange that the surgeon, excepting in a few instances, has not realized how much bearing these facts may have on his own problems of diagnosis and operative treatment.

If the surgeon receives a negative Wassermann report before operation, the factor of a possible syphilis is often dismissed. Often the Wassermann test is not even done, because the patient does not have any glaring manifestations of the disease, and denies any previous infection. We must realize that a negative Wassermann reaction means nothing, as far as the possibility of syphilis goes. The fact that many patients are infected, innocently or otherwise without their knowledge, is not realized as often as it should be.

Surgical syphilis has to do with the lesions of syphilis which require surgical treatment, either conservative or operative, in conjunction with specific medication. Also we must include those cases where manifestations of the disease simulate surgical conditions demanding operative intervention. In a case demanding operative surgery in a syphilitic, the operation wound may take on the characteristics of specific ulceration, but this is not necessarily so, and does not happen in the majority of cases.

In cases of suspected syphilis with negative Wassermann reactions, we have in skeletal radiography, a most valuable method of detecting at times a silent syphilis. This, of course, does not mean that the trouble the patient is to be operated upon for is necessarily syphilis, but that the old infection is there, and may light up after operation. Probably about 15 or 18% of those applying for surgical treatment at large hospital clinics, have been infected some time or other, with the spirochaeta pallida.

In considering this subject more in detail, we find that there are certain diseases and certain parts of the body where we find syphilis masquerading as a surgical condition, or complicating a surgical case. From a study of such cases we find many unrecognized specific infections, and can draw some definite conclusions.

Cervical adenitis, due to tertiary syphilis, a gummatous infiltration of the glands, is not so very uncommon. It has been mistaken for tuberculous cervical adenitis, and for Hodgkin's disease, more than once. Deep seated syphilitic mediastinitis is sometimes mistaken for hopeless malignant disease, and a fatal prognosis given, when the patient has been subsequently relieved of symptoms and symptomatically cured by recognition of the real cause of the trouble and vigorous specific treatment.

Obscure conditions simulating ordinary bursitis or synovitis, are sometimes treated for a long time with a mistaken diagnosis, and months afterward, when the diagnosis of a luetic bursitis or synovitis is made, they are quickly symptomatically cured. This is true of both those cases which have been treated conservatively and those which have been operated upon, and have not healed.

Syphilitic bone disease at times underlies varicose veins of the legs and varicose ulcers. The veins are operated upon but the ulcers return. When the true cause of the condition is recognized, cure quickly follows in many cases. Not infrequently specific ulcers of the leg are diagnosed as varicose, because the patient has varicose veins. A true syphilitic phlebitis is rare, but exists.

In the question of non-union and delayed union of fractures we must always have in mind the possibility that syphilis is at the bottom of the trouble. Routine Wassermann tests should always be made in these cases, and when they are negative, x-rays of the other bones should be taken to see if they show evidence of an old syphilis. In one clinic in a distant city a Wassermann test was taken in every case of ununited fracture for a year. Every case gave a positive reaction.

Bone disease caused by syphilis, apart from the ordinary osteoperiostitis, may cause a rarefaction or thinning of the bone, making the individual more liable to fracture. Repeated fractures, especially if the trauma is slight, make us think of the possibility of syphilis. The French workers of some years ago understood these facts, which are as yet not fully appreciated in America.

Gummatous infiltration of the testicle is not infrequently operated upon for sarcoma, teratoma, or tuberculosis. In such cases it must be remembered that outside of a Neisser infection, gumma is the common, ordinary cause of enlargement and it should be ruled out by tests, history, and, if necessary, therapeutic test, before operation is done.

The tabetic arthropathies, with or without ulceration, are not infrequently incorrectly diagnosed, and the underlying cause of the trouble unrecognized. A painless ulcer on the sole of the foot, with a hole leading to dead bone, usually means tabes, though syringomyelia and leprosy must be thought of. All the so-called "stomach cases" that the surgeon sees must be closely scrutinized with a view to syphilis as a cause. Five or six per cent. of ulcers of the stomach are now said to be syphilitic. I believe that 10 per cent. would be nearer the truth. Gummatous ulceration of the stomach may simulate gastric cancer so closely both in symptoms and in radiographic picture, as to make the diagnosis very uncertain. There is an old French proverb which reads, "In a case where a malignant tumor is suspected, happy is he whose father has had syphilis." Fournier modified this saying to read, "In a case where a malignant tumor is suspected, happy is he whose grandfather has had syphilis."

The wide field of the relation of syphilis to trauma and especially industrial injury has been little explored. In industrial accident cases it has been demonstrated that many times a complicating previous syphilis may be overlooked, and the patient's convalescence retarded from lack of specific treatment.

Many times cases have been operated upon for supposed acute appendicitis or gall bladder disease, only to find that the patient was suffering from the gastric crises of tabes.

In this paper it is possible only to outline some of the many important points connected with surgical syphilis. In hospital practice it is often the surgeon who is the first to see the unusual and obscure manifestations of syphilis, as such cases are often sent first to his department, it being supposed they are of a purely surgical nature. Careful thought and examination with reference to lues, will richly repay the surgeon. Many times he will save himself or save others the humiliation of operating for a condition in which active surgical intervention is not indicated. With this in mind, it is fitting to remember the last words of Stolper, in his classic article on "Syphilis and Trauma," "If we are keen observers we shall shorten many cases of long convalescence, and avoid many bad results, and for some will produce a cure, for in the words of her greatest master, Virchow, 'Shockingly great is the havoc wrought by syphilis.'"

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Society Report.

PROCEEDINGS OF THE NEW ENGLAND BRANCH OF THE AMERICAN UROLOGICAL ASSOCIATION.

(Concluded from page 562.)

Dr Smith: I should like to report briefly two cases of bilateral ligation of the ureter that occurred about two years ago within five days of each other.

A woman of forty had a supravaginal hysterectomy on December 27, 1917. After the operation she passed seven ounces of urine. then one ounce, and no more. I saw her on December 30th, seventy-two hours after operation; she had vomited on that day and had pain in her back. Cystoscopy; normal bladder; both ureters catheterized for about 8 cm. Catheters would not pass above that point. I believed that both ureters had been ligated and advised bilateral nephrostomy. She was given ether; both kidneys were exposed; the pelves were distended but not dilated. I opened the pelvis on each side and urine gushed out. Tubes were inserted by the following method: A curved hemostat length was passed through the pelvic incision, out through cortex; the tube was grasped and drawn in through cortex to pelvis. The incisions into pelves were not sutured. Patient made a good recovery after that. There was a good flow of urine from the tubes. On January 18 I cystoscoped her and found the ureters obstructed as before. On January 21st, attempted to catheterize ureters but could not get by the point of obstruction, so it seemed proper to attempt to relieve the ureteral obstruction. This was done through Gibson incisions, first on one side and then on the other. The ureters were indentified above the point of ligation. At that point there was a mass of adhesions. Both ureters were thinned down to mere threads; on the left side just a fibrous cord between the two ends of the ureter existed. Figure 1 shows this condition.

In the right ureter a very narrow lumen persisted. I made a longitudinal incision into this and sewed it up transversely as shown in Figure 2*a*. The incision was carried farther in both directions than is shown in the illustration. On the left side, the ureter was practically pinched off. I resected both ends obliquely, then sutured the cut ends together with interrupted stitches of 00 catgut. By

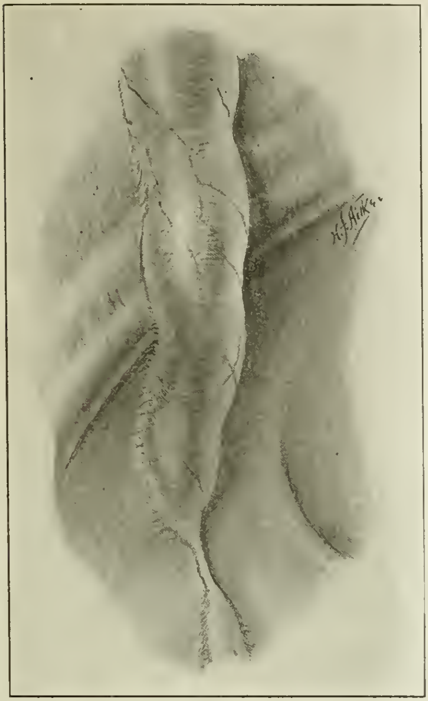

FIG. 1.

bringing the longest side of each level together, and the shortest side together, the circumference of the sutured area was increased, thereby avoiding a narrowing of the lumen (Fig. 2*b*). This method was suggested by A. L. Soresi, *Rev. de Chirurgie,* Jan.-Feb., 1917.

The patient did very well and I removed the nephrostomy tubes six days later. A catheter was left in the left ureter for six days, after which it was removed. On February 14, all the wounds were healed. Ninety-four ounces of urine had been passed. Urine was clearing up. The following summer the patient had an attack of pain on right side and I feared she might be going to have obstruction of right ureter; passed catheter No. 6 Fr., which went up without any obstruction. She had a constant bladder residuum of four ounces and I thought the nerve supply to bladder had been destroyed by the hysterectomy. However, as far as ureters were concerned she was all right.

January 4 1918, I saw a patient who had had a total hysterectomy for carcinoma on January 3. On January 4, at 7 P.M., she was vomiting and having general distress. She had voided eight ounces of urine after operation and then no more. Cystoscope showed areas of retraction in base of bladder above each ureter. Ureteral catheters were obstructed on each side about 1 cm. above the meatus. Bilateral nephrostomy was done as in the first case. She was fairly comfortable with tubes in back. On April 5, 1918, about three months later, she decided to have another operation to try to remove the ureteral obstruction. Spinal anesthesia and also very light ether. Transverse suprapubic incision. The peritoneum was adherent to the bladder and was opened. No evidence of recurrence of carcinoma in the pelvis. There were light adhesions. The peritoneum was stripped off the bladder. The ureters were freed and followed down close to the bladder. Each one ran into a firm mass of adhesions. The ureters were cut across just above the mass. The bladder was opened and found to be clean. A Cleveland needle was poked through the wall at the point where the ureters would come in most easily. The ureters were seized by Cleveland needle and drawn quarter of an inch into the bladder. Fastened to the ontside

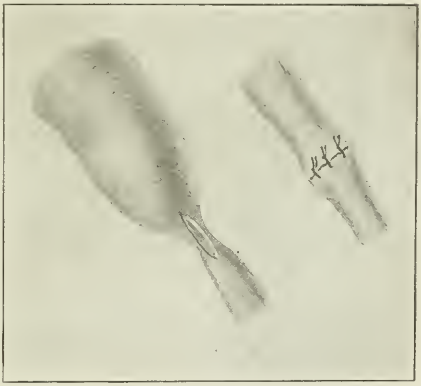

FIG. 2*a*.

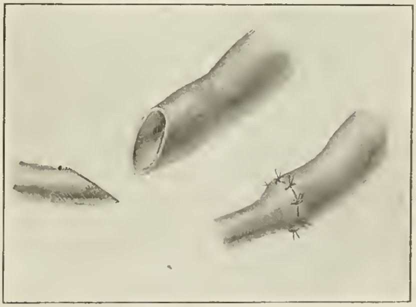

FIG. 2*b*.

of bladder by two catgut sutures. The bladder was closed tightly. Catheter put in. Nephrostomy tubes removed. Patient drained eleven ounces the first night. She did fairly well and the right side closed completely. The left kidney incision continued to drain more or less intermittently. In the summer of 1918 she came back to the hospital to see if something could be done for her. I attempted to catheterize left ureter but could not pass catheter into it, as the end was loose in the bladder. Then I thought I could cut down on the ureter and put in indwelling catheter. When I examined her, prepared to do this, I found she had a recurrence of carcinoma in the vagina. Her condition did not seem good enough to warrant operation, as I felt she could not last long on account of carcinoma. She died the following November

Dr. Tenney: Some years ago I saw a case of that type and did a double nephrostomy. The patient lived only 48 hours after the nephrostomy. The kidneys did not start working again. Dr. Smith is certainly to be congratulated on his results.

Dr. O'Neil: I remember seeing a case a few years ago where both ureters had been ligated in the course of an abdominal operation. I made a cystoscopic examination. There was a small quantity of urine in the bladder. Both ureters were obstructed about an inch from the bladder. I advised that bi-lateral nephrostomy be done at once. This was on the second day after operation. The operation was performed on the afternoon of the day following the cystoscopy. The patient did not recover.

Dr. A. H. Crosbie: I wish to report a case in which the ureter was severed during an abdominal operation and later was successfully reunited.

The patient, a frail girl of 26, was operated on June 4, 1919, and a large fibroid pelvic tumor removed. Two days after operation a mass appeared just above the pubes. This was thought to be a full bladder, but catheterization failed to remove the tumor. It was then thought to be a collection of pus and a puncture was made through the posterior cul de sac. The puncture brought a gush of urine with disappearance of the tumor. I was called in at this time. A ureter catheter passed easily up the left ureter and a free flow of urine obtained. The ureter catheter on the right met obstruction about 6 cm. up. An injection of thorium, at this point, showed that it became diffused through the tissues and did not pass up the ureter. It was evident that the right ureter was obstructed at this point. As the patient's condition was far from good and there was free flow of urine from the vagina it was deemed best to wait before attempting to reunite the ureter. A drainage tube was inserted into the sinus in the posterior cul de sac. Finally, August 18th, the patient had improved very much and was running a normal temperature. An incision was made down to the right ureter. The upper end of the ureter was found to be dilated to the size of a thumb. The lower end was easily found lying near the severed end of the dilated portion. A probe was passed to the bladder through the lower end. The opening in the upper portion had apparently become much constricted. On opening the upper end there was a gush of pus and urine. Pus continued to ooze from the ureter, showing evidence of a good deal of pyelonephritis. It seemed wise to do a nephrostomy to be sure of complete drainage. This was done and a No. 7 ureter catheter was then passed through the right ureter to the kidney pelvis and the severed ends of the ureter united about the catheter with a No. 0 chromic catgut.

For the first few days a great deal of pus drained through the nephrostomy tube. This soon stopped and the urine became clear. There was a free flow of urine through the catheter, too. The nephrostomy tube and the ureter catheter were removed on the tenth day. The patient began to leak a little urine through the vagina so the ureter catheter was replaced, without difficulty. The leaking at once stopped. After a few days the catheter was again removed. For a few days a few drops of urine came through the vagina. This finally stopped and October 11, the patient was discharged entirely healed.

Book Review.

The Action of Muscles. By William Colin Mackenzie, M.D., F.R.C.S., F.R.S., New York: Paul B. Hoeber. 1918.

The author aims at giving a correct and fundamental understanding of muscle action. He emphasizes the prime importance of appreciating the ancestral history of myology, in order to be able to handle paralysis properly. Each region of the body is discussed with reference to the anatomy and mechanics of the muscles and their opponents, the "zero" position of rest of the muscles, the principles underlying injuries, and the method of treatment. The subject matter is clear and logical, and is illustrated with numerous cuts. It is a contribution especially useful to army medical circles, who take care of men suffering from disabilities of an orthopedic nature.

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THURSDAY, JUNE 3, 1920

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THE DATING OF PRESCRIPTIONS FOR NARCOTIC DRUGS.

The practice of pre-dating prescriptions for narcotic drugs so that users will not have to make frequent calls upon their physicians resulted in such flagrant abuses that the Internal Revenue Office was obliged to guard narcotic prescriptions with stringent regulations. There have been instances where users of narcotic drugs have been given two and three prescriptions at the same time, dated to allow the users to get drugs at subsequent intervals rather than to have them run to the practitioner for observation after each prescription had run out.

The Internal Revenue Bureau insists that all prescriptions for drugs and preparations must be dated and signed by the physician on the day issued. They must bear the name, address, and registry number of the practitioner, must be written in ink, indelible pencil or typewriter; if typewritten, they must be signed by the practitioner with ink or indelible pencil, and the druggist who fills it must obtain the signature and address of the person who secures it. Refilling, or partial filling at any time, of narcotic drug prescriptions is prohibited and telephone orders are not permitted, even though the prescriptions covering such orders are subsequently received. Besides the Federal regulations, there is a Massachusetts law which provides that such prescriptions must be filled within five days after being dated.

Regulations further provide that a prescription must be issued only for legitimate medical purposes. An order purporting to be a prescription issued to an addict not in the course of professional treatment in an attempted cure of the habit, but for the purpose of providing the user with narcotics sufficient to keep him comfortable by maintaining his customary use, is not a prescription within the meaning of the act. Regulations also require practitioners to register with the Internal Revenue Office in order to dispense narcotic drugs. Some claim that they do not "dispense," but the department has ruled that a practitioner "dispenses" when he writes a prescription. Every narcotic prescription must bear the registry number of the doctor writing it.

Druggists have greatly assisted the Internal Revenue Office in enforcing the narcotic regulations by their refusal to fill prescriptions which are not written in accordance with all requirements. It is through the coöperation of many of these reliable druggists as well as of practitioners, that the Internal Revenue Office is able to keep in intimate touch with the narcotic traffic.

THE ONE HUNDREDTH ANNIVERSARY OF THE BIRTHDAY OF FLORENCE NIGHTINGALE.

On the thirteenth of May, throughout the country, celebrations were held in honor of the one hundredth anniversary of the birthday of Florence Nightingale, to whose vision the world owes a debt of gratitude for the adequately trained nurse. It would be hard to picture today a world without trained nurses. The last five years particularly have shown not only the benefits to be derived from such care as is given by the adequately trained nurse, but the absolute necessity for this care.

Florence Nightingale was of English parentage, of gentle birth. All her life was devoted to bettering conditions in hospitals, particularly in giving better nursing care to those who were unable to demand it for themselves. Her great opportunity came during the Crimean War, when she finally was given authority to organize a Nursing Corps for the care of men wounded on the field of battle; her work in the Crimea proved, certainly to the English people, that not only was much suffering alleviated, but many lives saved, by proper and efficient nursing care, so that upon her return to England she was given $250,000 with which to start the Nightingale School of Nursing.

The first training school in this country, established approximately fifty years ago in Bellevue Hospital, was organized by a Nightingale sister brought over from England for that purpose, and it is only fitting to note here that the woman who may justly be called the Florence Nightingale of the United States of America, Jane A. Delano, was a graduate of this school. It was due to Miss Delano's foresight, vision and patriotism, and great love of humanity, that 35,000 graduate nurses of this country were made available for service, not only with the military forces of our own country, but also with our allies in Europe.

The Red Cross Nursing Service was organized by Miss Delano, to be available as a reserve for the Army in case of war. At the outbreak of the late war, there were approximately 8,000 nurses available for duty. This number was increased to 35,000 after the entry of the United States into the war, and these nurses were in service either in military hospitals, in civilian relief work, both here and abroad, or doing recruiting for the service in this country, these being chiefly those not eligible for active military duty or waiting assignment in military hospitals. With the signing of the Armistice and demobilization of the military forces comes the problem of how we are to care for the soldiers who, either through casualties on the battle field or disability contracted in military camps, will not be able to take up their work again for some time, if at all.

The work of giving hospital care and treatment to these men has been delegated to the Public Health Service and 52 hospitals have been established for this purpose. There are in the service now approximately 1,000 nurses, the majority of whom have done military service and who see in this work a continuance of the patriotic and humane service for which Florence Nightingale gave the best years of her life, and for which Jane Delano gave her life itself. Is it not an obligation upon the nursing profession, not only to uphold the standards of these two great nurses, but to see that the best of nursing care is given to these beneficiaries of the Government, and to offer its service in this field of endeavor?

* * *

ORGANIZATION OF THE MASSACHUSETTS HEALTH COUNCIL.

As a further step in the direction of more effective coöperation in dealing with the health problems of the state, delegates from the principal state-wide organizations interested in public health met at the Boston Medical Library on May 12 under the auspices of the Public Health Committee of the Massachusetts Medical Society for the purpose of forming a central health council.

Subject to any necessary ratification by the organizations which they represented, delegates from the American Red Cross, the American Public Health Association, the Massachusetts Anti-tuberculosis League, the Massachusetts Association of Boards of Health, the Massachusetts Dental Society, the Massachusetts Medical Society, the Massachusetts Society for the Prevention of Cruelty to Children, and the Massachusetts Visiting Nurses' Association, were enrolled as members of the "Massachusetts Health Council," the purpose of which was declared to be, "to consider matters of mutual interest to the organizations represented with view to securing concerted action on the part of these organizations with respect to such matters."

A committee was appointed to recommend the permanent form of organization of the Council and its by-laws and report at a meeting to be held on June 2, 1920.

* * *

MEDICAL NOTES.

Award of the Samuel D. Gross Prize.—The Samuel D. Gross Prize of the Philadelphia Academy of Surgery for 1920, amounting to fifteen hundred dollars, has been awarded to Dr. Evarts A. Graham of Washington University Medical School, St. Louis, for his essay entitled "Some Fundamental Considerations in the Treatment of Empyema Thoracis."

Library of Sir William Osler.—The medical and scientific library of Sir William Osler was bequeathed by him to McGill University, Montreal.

Gift to the Henry Phipps Institute.—The sum of five hundred thousand dollars has been given by the family of Mr. Henry Phipps to the Phipps Institute of the University of Pennsylvania, for the study of tuberculosis.

Endowment Fund of the New York Post-Graduate Medical School.—The New York Post-Graduate Medical School Endowment Fund will receive two hundred and fifty thousand dollars from Mr. James F. Brady and from Mr. Vincent Astor toward the two million dollar fund as soon as the first million dollars has been raised.

Appropriation for the University of Mississippi.—An appropriation of over one million dollars has been made by the Mississippi legislature for the University of Mississippi: $250,000 for a new chemical building to provide laboratory and other facilities for students in the medical school, $10,000 to secure permanent equipment for the medical school, exclusive of chemistry, and additional funds with which the salaries of all the teachers can be increased.

Deaths in the Italian Sanitary Service.—During the war, there were in the Italian Sanitary Service the following deaths: Medical officers, 1,060, including 377 killed in action, 216 students, 40 dispensers, 40 chaplains, 33 nursing sisters, and 11 members of the Red Cross staff.

Swiss Medical Congress.—A Swiss medical congress is to be held at Berne on June 5 and 6, 1920.

Walter Reed General Hospital.—The Walter Reed General Hospital, Washington, D. C., is to be gradually developed into one of the main hospitals of the Army. In order to establish "a medical center" at this institution, plans have been made for the expenditure of about ten million dollars. Two additions are to be made to the main building for the use of medical and surgical wards, a dental department, laboratory, eye, ear, and throat department and dispensary, which are now housed for the most part in temporary buildings.

Peking Union Medical College.—The trustees of the Peking Union Medical College, Peking, China, have accepted the resignation of Dr. Franklin C. McLean as director of the college. Dr. McLean has retired from the directorship in order to devote himself to the professional work of the department of medicine of the Peking College, of which he is professor and head. Dr. Henry S. Houghton, formerly dean of the Harvard Medical School of China, at Shanghai, has been appointed acting director of the college.

Appointment of Dr. J. B. Cleland.—Dr. J. B. Cleland has been appointed to the chair of pathology which has just been created at the Adelaide University, South Australia.

Memorial Meeting in Honor of Dr. Abraham Jacobi.—At a memorial meeting held on May 6 by the New York Academy of Medicine in honor of the late Dr. Abraham Jacobi's ninetieth birthday, a bas-relief of Dr. Jacobi was presented by George McAneny and was accepted by the president of the Academy, Dr. George David Stewart. An address was delivered by George E. Vincent, of the Rockefeller Foundation.

The Modern Hospital.—*The Modern Hospital*, a monthly journal devoted to the building, equipment, and administration of hospitals and allied institutions, has established its headquarters at 22-24 East Ontario Street, Chicago, in a building which is to be known hereafter as The Modern Hospital Building. *The Modern Hospital* is thus adding another to the group of buildings which is making Chicago one of the leading centers of medical and hospital organization in this country. The building will be used not only for the offices of *The Modern Hospital, The Modern Hospital Year Book,* and *Modern Medicine*, but also as the national headquarters of the American Hospital Association and the National Catholic Welfare Council. Within a few blocks stand the building occupied by the American Medical Association and the new home of the American College of Surgeons.

Study of African Sleeping Sickness.—Dr. Louise Pearce of the Rockefeller Institute for Medical Research has sailed for England and Belgium *en route* to the Belgian Congo for the purpose of studying the chemotherapy of African sleeping sickness.

Gift to Polish Red Cross.—It has been announced by the American Red Cross that a gift of two million Polish marks has been made to the Polish Red Cross in order to enable it to equip and maintain three hospitals in an effort to check further the spread of typhus in that country.

BOSTON AND MASSACHUSETTS.

Week's Death Rate in Boston.—During the week ending May 22, 1920, the number of deaths reported was 239 against 220 last year, with a rate of 15.42 against 14.41 last year. There were 43 deaths under one year of age against 37 last year.

The number of cases of principal reportable diseases were: Diphtheria, 43; scarlet fever, 54; measles, 230; whooping cough, 88; typhoid fever, 3; tuberculosis, 51.

Included in the above were the following cases of non-residents: Diphtheria, 7; scarlet fever, 12; measles, 4; typhoid fever, 2; tuberculosis, 8.

Total deaths from these diseases were: Diphtheria, 4; scarlet fever, 4; measles, 4; whooping cough, 8; tuberculosis, 21.

Included in the above were the following non-residents: Scarlet fever, 1; tuberculosis, 1.

Influenza cases, 5; smallpox cases, 3.

Franklin District Medical Society.—The annual meeting of the Franklin District Medical Society was held at the Mansion House on Tuesday, May 11, 1920. Dr. Theodore S. Bacon of Springfield delivered an address. Officers were elected for the coming year.

Appointment of Dr. Lawson G. Lowrey.—Dr. Lawson G. Lowrey has been appointed assistant professor in the Phychopathic Hospital of the University of Iowa. Dr. Lowrey has been chief medical officer of the Boston Psychopathic Hospital for three years.

The Brookline Health Bulletin.—The first number of the *Brookline Health Bulletin* has been issued and will be distributed to every household in Brookline. This Bulletin is a four-page paper, published as a means of disseminating information in regard to health problems. The material for the first number was collected by Dr. Francis P. Denny, health officer of the Brookline Board of Health. In the subject matter is included a list of the principal causes of death of Brookline residents and suggested means of prevention. This article states that during 1919 the principal causes of death in Brookline included the following diseases: Diseases of the heart, 83; pneumonia (and influenza), 65; cancer, 57; cerebral hemorrhage (apoplexy), 40; diseases of the arteries, 35; tuberculosis (all forms), 25; diseases of the kidneys, 24; all other causes, 131.

The *Bulletin* contains interesting articles on the serious consequences that often follow delay in calling a physician, especially with reference to the appearance of white spots in children's throats. This article discourages too much faith in "neighborly advice." Other articles deal with the fly and mosquito nuisance, clean-up time, the prevention of tuberculosis, cancer, and other subjects. The subject of milk inspection is discussed, and a list of all dealers supplying milk to residents of Brookline is given, with each dealer's rating as to the grade and price of milk, raw or pasteurized, the average fat, the sediment test, and the amount of bacteria per cubic centimeter. The Board of Health has not hesitated in grading milk as very satisfactory, satisfactory, passable, unsatisfactory, or very unsatisfactory. Valuable suggestions are given as to the proper way in which milk should be kept. Other articles deal with information imparted by the Brookline Food Center, and with low cost diets, menus, and recipes.

The Massachusetts Medical Society.

The one hundred and thirty-ninth anniversary of the Society will be held at the Boston Medical Library June 8 and 9, 1920, according to the following program:

GENERAL INFORMATION

A Bureau of Information will be maintained by the Committee of Arrangements during Tuesday and Wednesday in the lobby of the

Boston Medical Library, 8 The Fenway, the headquarters of the Society.

All Fellows are requested to register and procure their dinner tickets as early as possible at the Bureau of Information.

All General and Section Meetings will be held at the Boston Medical Library. Parking space for automobiles, with supervision, will be provided. Inquire of the police officer in charge. The dinner will be held at the American House, 56 Hanover Street, Boston, Wednesday evening.

Fellows of the Society desiring hotel accommodations for Tuesday or Wednesday night are advised to communicate with the hotel desired at an early date, or to communicate with the chairman of the Committee of Arrangements.

The Harvard Medical School, 240 Longwood Avenue, and the Tufts College Medical School, 416 Huntington Avenue, will be open for inspection by the Fellows both Tuesday and Wednesday.

There will be an exhibit of the charter and seal of the Society and of interesting books, photographs, medals, and medical relics in Holmes Hall, Boston Medical Library.

June 8, 1920

TUESDAY MORNING

CLINICS WILL BE HELD AS FOLLOWS:

Peter Bent Brigham Hospital.

Large Amphitheatre, 10 A.M.

10.00 Relation Between the Pulse Rate and Basal Cell Metabolism. Dr. Cyrus G. Sturgis.

10.10 Experimental Myocarditis by Thyroid Feeding in Guinea Pigs. Dr. E. W. Goodpasture.

10.20 Results of the Treatment of Hyperthyroidism by Various Surgical Methods. Dr. David Cheever.

10.30 Hypersensitiveness to Epinephrin. Dr. Joseph T. Wearn.

10.40 Results of the Treatment of Hayfever. Dr. I. C. Walker.

10.50 Experimental Observations on Causation of Symptoms in Peptic Ulcer. Dr. C. W. McClure.

11.00 Surgical Treatment of Malignant Disease of the Colon. Dr. John Homans.

11.10 Cases of Cancer of the Pancreas. Dr. Frank D. Adams.

11.20 The Preparation of ~~the~~ Patient for Prostatectomy. Dr. Vincent O'Connor.

11.30 The Diagnostic Value of Pyelography. Dr. William C. Quinby.

11.40 Experimental Paratyphoid Fever in Rabbits. Drs. Keene and Goodpasture.

11.50 Vascular Hypertension. Dr. James P. O'Hare.

12.00 Blood Volume in Pernicious Anemia. Dr. George P. Denny.

12.10 So-called Acute Dilatation of the Heart. Dr. Samuel A. Levine.

12.20 The Administration of Digitalis. Dr. Channing Frothingham.

12.30 Post-Operative Pulmonary Complications. Dr. E. C. Cutter.

12.40 Results of the Operative Treatment of Trifacial Neuralgia. Dr. Gilbert Horrax.

12.50 Mistakes in the Diagnosis of Brain Tumors. Dr. Harvey Cushing.

Operations will be performed between the hours of 9.00 A.M. and 12.00 M. by the Surgical Staff.

Ward rounds will be given by the Medical Service between 10.00 and 12.

Massachusetts General Hospital.

Lower Amphitheatre, Out-Patient Department
10 A.M. to 12 M.

10.00 Artificial Pneumo-Peritoneum as an Aid to Abdominal Diagnosis. Dr. Mason.

10.10 Karrell Diet in Cardiac and Renal Dropsy. Dr. H. Morrison.

10.20 Adenomyoma of Uterus and Contiguous Structures. Dr. H. F. Hartwell.

10.30 New Operative Approach to Hip and Sacro-iliac Joints. Dr. Smith Peterson.

10.40 Anatomical Studies of the Esophagus. Dr. H. P. Mosher.

10.50 Use of Quartz Light in Varicose Ulcers. Dr. E. L. Oliver.

11.00 Eye Complications of Influenza and Pneumonia. Dr. Ralph Hatch.

11.10 Anaphylactic Vasomotor Manifestations in the Nose. Dr. H. G. Tobey.

11.20 Observations on the Treatment of Leukemia by the X-Ray. Dr. Alexander MacMillan.

11.30 Bacterial Asthma. Dr. F. M. Rackemann.

11.40 Infantile Diabetes. Dr. P. E. Belknap.

11.50 Significance of Blood and Spinal Fluid Tests in General Paresis. Dr. H. E. Foster.

Exhibition of cases and surgical operations by the Staff, Surgical Building, 11 A.M to 1 P.M.

Boston City Hospital.

Cheever Surgical Amphitheatre, 10 A.M.

Dr. F. B. Lund: operations.
Demonstration of cases:
1. Septic knee.
2. Skin graft of foot.
3. Resection of stomach.
4. Autoplastic bone graft.

Dr. E. H. Nichols: operations.
Demonstration of cases.

Dr. F. J. Cotton: operations.
Demonstration of
1. End-result, Fracture of Hip.
2. End-result, Fracture of Hip.
3. Fracture of Os Calcis.
4. Operative Reduction, Tarsal Fracture.

Dr. A. R. Kimpton: operations.
Demonstration of
1. Sarcoma of Stomach.
2. Cancer of hepatic flexure.

Dr. R. C. Larrabee
Demonstration of case:
Pathological hemorrhage.

Dr. T. Buckman
Demonstration of case:
Chronic recurrent hemorrhagic purpura

Dr. T. W. Thorndike
Demonstration of dermatological cases.

Dr. R. A. Coffin

Demonstration of case:
Paraffinoma.

Special invitation is extended to visit

1. Influenza Research Laboratory. Dr. H. Osgood.
2. Nephritic Research Laboratory. Dr. R. Ohler.
3. Blood Service Laboratory. Dr. Larrabee and Dr. Buckman.
4. Pneumonia Service. Dr. E. A. Locke.

Special demonstration photomicrographs, in the Pathological Laboratory. Dr. F. B. Mallory.

Fellows are invited to visit any and all the wards of the Medical and Surgical Services.

Massachusetts Homeopathic Hospital

East Concord Street, 10 A.M. to 1 P.M.

Surgical Clinic.
Drs. J. E. Briggs, W. F. Wesselhoeft, T. E. Chandler, C. T. Howard, C. Crane, H. J. Lee. One-half hour demonstrations.

Nose and Throat Clinic.
Drs. Conrad Smith, E. R. Johnson, C. W. Bush. Tonsillectomy by the La Force method.

Orthopedic Clinic.
Drs. A. G. Howard, H. J. Fitzsimmons. Ankylosis of the hip. Demonstration of cases. Operations.

Pediatric Clinic.
Drs. O. R. Chadwell, H. C. Petterson. Athrypsia. Presentation of cases.

Obstetrical Clinic (Robinson Memorial Building).
Drs. E. W. Smith, W. A. Ham. Antenatal Clinic. Ward demonstrations of puerperal care.

Free Hospital for Women.

Pond Avenue, Brookline.

Beginning at 7.15 A.M., there will be operations on gynecological cases, both plastic and Abdominal, by Dr. W. P. Graves and Dr. F. A. Pemberton.

Infants' Hospital.

55 Van Dyke Street, Boston.

There will be a ward visit and medical clinic at 10.30 A.M.

Children's Hospital.

Longwood Avenue, Boston.

There will be clinics and operations on the Surgical Service and ward visits on the Medical Service, at 10 A.M.

Psychopathic Hospital.

74 Fenwood Road, Boston.

At nine o'clock Dr. Solomon's clinic for the treatment of neurosyphilis. At ten o'clock a ward round of the Hospital, with demonstration of the major types of psychoses.

Carney Hospital.

South Boston.

There will be clinics and operations on the Surgical Service and ward visits on the Medical Service, at 10 A.M.

Boston Lying-in Hospital.

24 McLean Street, Boston.

There will be a ward visit at ten o'clock, with a probability of two Caesarean operations.

ANNUAL MEETING OF THE SUPERVISORS.

John Ware Hall, 11.30 O'clock

TUESDAY NOON

ANNUAL MEETING OF THE COUNCIL

John Ware Hall

TUESDAY AFTERNOON

MEETING OF THE SECTION OF MEDICINE

Sprague Hall, 2.30 O'clock

Officers of the Section of Medicine

F. Van Nüys, M.D., Weston, *Chairman.*
Lewis Webb Hill, M.D., Boston, *Secretary.*

1. **"The Differential Diagnosis and Treatment of the Hemorrhagic Diseases."**
   Ralph C. Larrabee, M.D., Boston.
   Discussion opened by Thomas E. Buckman, M.D., Boston.
2. **"The Use of the Quartz Light in Dermatology."**
   E. Lawrence Oliver, M.D., Boston.
   Discussion opened by Loretta J. Cummins, M.D., Boston; and Harvey P. Towle, M.D., Boston.
3. **"Observations upon Ductless Gland Therapy."**
   Charles H. Lawrence, M.D., Boston.
   Discussion opened by Louis M. Spear, M.D., Boston.
4. **"Observations upon Diabetics of Various Types under the Present Methods of Treatment."**
   F. Gorham Brigham, M.D., Boston.
   Discussion opened by Elliott P. Joslin, M.D., Boston.
5. **"The Specific Treatment of Respiratory Infections."**
   George P. Sanborn, M.D., Boston.
   Discussion opened by Lesley H. Spooner, M.D., Boston.

TUESDAY AFTERNOON

MEETING OF THE SECTION OF SURGERY

John Ware Hall, 2.30 O'clock

Officers of the Section of Surgery

R. B. Greenough, M.D., Boston, *Chairman.*
I. J. Walker, M.D., Allston, *Secretary.*

1. **"Multiple Resections of the Small Intestines."**
   Ernest L. Hunt, M.D., Worcester.
   Discussion: Homer Gage, M.D., Worcester; F. H. Washburn, M.D., Holden.
2. **"Results of Cholecystectomy with Special Reference to Dilatation of the Common Duct."**

John Homans, M.D., Boston.
Discussion: Fred B. Lund, M.D., Boston; George W. W. Brewster, M.D., Boston.

3. **"Acute Intestinal Obstruction: A Study of a Second Series of Cases from the Massachusetts General Hospital."**
   Edward P. Richardson, M.D., Boston.
   Discussion: Charles L. Scudder, M.D., Boston; Ralph H. Seelye, M.D., Springfield; Peer P. Johnson, M.D., Beverly.
4. **"Cancer. Factors Entering into the Delay in Its Surgical Treatment."**
   Channing C. Simmons, M.D., Boston, and Ernest M. Daland, M.D., Allston.
   Discussion: Edward Reynolds, M.D., Boston; Philemon E. Truesdale, M.D., Fall River.

TUESDAY AFTERNOON

MEETING OF THE SECTION OF TUBERCULOSIS

Rear Upper Hall, 2.30 O'clock

Officers of the Section of Tuberculosis

H. D. Chadwick, M.D., Westfield, *Chairman.*
E. O. Otis, M.D., Boston, *Secretary.*

1. **"The Value of a County Tuberculosis Survey with Clinics."**
   Miss Bernice M. Billings, Director of Public Health Nursing, American Red Cross.
   Discussion opened by A. K. Stone, M.D., Framingham Center, Late chairman of trustees of Massachusetts Hospitals for Consumptives.
2. **"A Plea for a Department of Tuberculosis in Medical Schools."**
   W. J. Gallivan, M.D., Boston, Director of the Department of Tuberculosis, Massachusetts State Department of Health.
   Discussion opened by John B. Hawes, 2d, M.D., Boston, of the Tuberculosis Department, Massachusetts General Hospital.
3. **"Itinerant Consultation Service."**
   H. S. Wagner, M.D., Pocasset, Superintendent of the Barnstable County Infirmary.
   Discussion opened by P. Challis Bartlett, M.D., Newton Highlands, Chief Medical Examiner of the Community Health and Tuberculosis Demonstration, Framingham.
4. **"Occupational Therapy for the Tuberculous."**
   F. H. Hunt, M.D., Mattapan, Resident Physician, Boston Consumptives' Hospital.
   Discussion by Vincent Y. Bowditch, M.D., Boston, Director of the Sharon Sanatorium; Dr. H. A. Pattison, Medical Field Secretary of the National Tuberculosis Association; and Dr. Bayard T. Crane, Rutland, Supt. of the Central New England Sanatorium and of the Industrial Colony of the Rutland Private Sanatorium Association.
5. **"Report on Nutrition Clinics in Tuberculosis Work."**
   Dr. William R. P. Emerson, Boston.

TUESDAY EVENING

THE SHATTUCK LECTURE

John Ware Hall, 8.00 O'clock

By Allan J. McLaughlin, M.D., Assistant Surgeon-General, United States Public Health Service, Washington, D. C.
Subject: "Influenza."

After the lecture light refreshments will be served in the Supper Room.

JUNE 9, 1920

WEDNESDAY, MORNING

ONE HUNDRED AND THIRTY-NINTH ANNIVERSARY

John Ware Hall, 9.30 O'clock

Business of the Annual Meeting.

Including consideration of the revised By-Laws and Code of Ethics, a draft of which was sent to every Fellow with the official program.

The following papers will be presented:

1. **"Preventive Medicine and Hygiene in its Relation to Schools."**
   Frank S. Churchill, M.D., Milton.
2. **"Preventive Medicine and Hygiene in its Relation to Colleges."**
   Roger I. Lee, M.D., Cambridge.
3. **"The General Management of Health in Industry."**
   W. Irving Clark, Jr., M.D., Worcester.
4. **"The Control of Venereal Disease."**
   George Gilbert Smith, M.D., Boston.
5. **"Mental Hygiene."**
   Walter E. Fernald, M.D., Waverley.

WEDNESDAY NOON

John Ware Hall

The Annual Discourse will be delivered by Hugh Cabot, M.D., Professor of Surgery at the University of Michigan, Ann Arbor, Michigan. Subject: "Health Insurance, State Medicine or What?"

WEDNESDAY AFTERNOON

MEETING OF THE SECTION OF HOSPITAL ADMINISTRATION

John Ware Hall, 2.30 O'clock

Officers of the Section of Hospital Administration

John T. Bottomley, M.D., Boston, *Chairman.*
Stephen Rushmore, M.D., Boston, *Secretary.*

1. **"What Should be the Attitude of the State toward Hospital Standardization?"**
   Michael F. Fallon, M.D., Worcester, Member of State Board of Registration in Medicine.
   Discussion opened by W. P. Bowers, M.D., Clinton.
2. **Some Practical Hospital Problems Encountered in an Industrial Community."**
   E. MacD. Stanton, M.D., Schenectady, New York.
   Discussion opened by C. E. Mongan, M.D., Somerville.
3. **"How Can the Shortage of Nurses be Met?"**
   Joseph B. Howland, M.D., Boston, Superintendent Peter Bent Brigham Hospital.
   Discussion opened by F. A. Washburn, M.D., Boston.

WEDNESDAY AFTERNOON

MEETING OF THE SECTION OF PEDIATRICS

Sprague Hall, 2.30 O'clock

Officers of the Section of Pediatrics

John Lovett Morse, M.D., Boston, *Chairman.*
J. Herbert Young, M.D., Newton, *Secretary.*

1. **"The Importance of Water in Disease."**
   Dr. Fritz B. Talbot, M.D., Boston.
   Discussion opened by William W. Howell, M.D., West Roxbury.
2. **"Cause and Prevention of Over-stimulation of the Modern American Child."**
   Erik St. J. Johnson, M.D., New Bedford.
   Discussion opened by L. E. Emerson, M.D., Cambridge.
3. **"The Significance of Meningeal Symptoms."**
   A. C. Eastman, M.D., Springfield.
   Discussion opened by John Jenks Thomas, M.D., Boston.
4. **"Parental Responsibility."**
   Henry I. Bowditch, M.D., Boston.
   Discussion opened by Maynard Ladd, M.D., Boston.

WEDNESDAY EVENING

6.30 O'clock

The **Annual Dinner** will be served at the American House, 56 Hanover Street, Boston, (Telephone Haymarket 4740) at 6.30 o'clock promptly. Dress suits not necessary. The tickets will be $2.50, and may be bought either at the Bureau of Information during Tuesday and Wednesday, or at the hotel just before the dinner.

After the speaking the Entertainment Committee of the Norfolk District will present a short play entitled:

BREAKING INTO THE ARMY
or
IT'S A GREAT LIFE IF YOU DON'T WEAKEN.

Fellows desiring to sit together in groups will please send their names to the chairman of the Committee of Arrangements, and the proper reservations will be made.

It is necessary that the chairman of the Committee know beforehand the approximate number of those who will attend the dinner, and for that purpose the reply postal card which was enclosed with the program should be mailed at once. His name and address are: Dr. R. H. Miller, 434 Marlborough Street, Boston 17, Mass.

Please notice the change in the time of the dinner from 7.00 o'clock to 6.30 o'clock.

Correspondence.

MEDICAL DEFENSE IN NEW YORK.

Mr. Editor:

The following data relating to the Medical Defense Act of the Medical Society of the State of New York cannot fail to be of interest to some of your readers. The data are obtained from the annual report of the society for 1919 and from Mr. James Taylor Lewis, the accomplished counsel of the Society.

During the twenty years from December, 1899, to December, 1919, eight hundred and eleven cases of alleged malpractice have come before Mr. Lewis for consideration. Of this number 401 cases have been actually disposed of in court. The remainder have been abandoned, or are still pending. The number of verdicts for the plaintiffs were eight. "Of these, four were reversed on appeal, one other is now on appeal to the Appellate Division of our First Department and another awaits the argument of a motion to set aside the verdict." This leaves only two cases as having been finally decided in favor of the plaintiffs.

"During these 20 years claims against the defendants have aggregated upwards of twelve million dollars. There has been actually paid to plaintiffs less than six thousand dollars. Two cases have been settled with my consent; I am informed that three others have been settled without my consent."

The foregoing facts are a striking commentary on the character of the charges brought against the defendant physicians. They also illustrate the fact that justice is still to be obtained in our courts. The skill of the counsel and the fidelity of the experts are worthy of high commendation. In only two instances was Mr. Lewis ever "asked by a member of the State Society where he was to get his money for testifying on behalf of a brother practitioner."

It is worthy of note that of the 39 cases brought before Mr. Lewis in 1919, five were for cases in which it was alleged that some material was left behind after an operation.

George W. Gay, M.D.

Boston, May 6, 1920.

NOTICE.

Massachusetts General Hospital.—Clinical meeting of the Out-Patient Department Medical Staff in the Out-Patient Department Amphitheatre on Wednesday, June 2, 1920, at 8 p.m.

Program: "The Practical X-Ray Value of Pneumoperitoneum."

Discussion by Dr. George W. Holmes.

Dr. Charles L. Scudder presiding.

F. A. Washburn, *Resident Physician.*

A CORRECTION.

In the issue of the Journal for April 15, in a reprint of an article entitled "Child Health Conditions in Boston," Dr. Robert D. Curtis was quoted as discussing Boston's mortality rate for 1919 as shown in the *Public Health Index*. Dr Curtis has disclaimed responsibility for any statements in that article, since he has seen no figures bearing on the subject.

RECENT DEATHS.

Dr. Joseph L. Sanborn died on May 17, 1920, at his home in North Amherst, at the age of fifty-four years. Dr. Sanborn was born in Lynn and was graduated from the Atlanta Medical School. He is survived by his widow, one son, and two sisters.

Dr. J. William Boss, one of the most widely known physicians of Beverly, died at his home, 366 Cabot street, in that city, May 11, 1920, after several days' illness of heart disease, at the age of 53 years. He served during the war in the medical corps, with the rank of captain, the greater part of his enlistment term at Camp Upton. He later resumed his practice in Beverly. He was a native of Gloucester. He received his medical degree at the University of Pennsylvania and took post-graduate courses in medicine in both France and England. He first practised at Philadelphia, then at Peabody and, since 1897, at Beverly. He had served the County of Essex on the state department of medical examiners and for many years was chairman of the Beverly board of health. He was unmarried.

The Boston Medical and Surgical Journal

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The Massachusetts Medical Society.

THE ANNUAL DISCOURSE.*

Note.—At an adjourned meeting of The Massachusetts Medical Society, held Oct. 3, 1860, it was

Resolved, "That The Massachusetts Medical Society hereby declares that it does not consider itself as having endorsed or censured the opinions in former published Annual Discourses, nor will it hold itself responsible for any opinions or sentiments advanced in any future similar discourses."

Resolved, "That the Committee on Publications be directed to print a statement to that effect at the commencement of each Annual Discourse which may hereafter be published."

COMPULSORY HEALTH INSURANCE: STATE MEDICINE OR WHAT?

By Hugh Cabot, M.D., F.A.C.S., Ann Arbor, Mich.,

Professor of Surgery, University of Michigan.

It has perhaps been a weakness of the medical profession that it has not sufficiently exerted its great potential influence in directing or influencing the changes in the relation of medical practice and medical custom to the community. We have on the whole been too apt to regard such things as other people's business and held the view that the care and management of the sick constituted our whole relation to the community. But it must now be perfectly clear that with the variety of suggested cures for the real or imaginary evils which are believed to surround the practice of medicine we must think clearly and act together and wisely if we are to prevent various developments which we believe to be unsuited to the requirements. Change is in the air. A demand for a closer relation between the public and its health agencies is wide-spread and proper. Democracy cannot hope to satisfy the claims of its admirers unless it can show success in protecting itself against the diseases of body and mind with which it is threatened.

The present demand for change of some kind has its source in a variety of conditions. Perhaps the most fundamental is a dissatisfaction with private charity as a method of caring for the ills of those who are unable to pay for satisfactory care. The system by which we have provided almost the best skill that the community can afford for the care of the paupers and the derelicts of society has been outgrown. The self-respecting though impecunious citizen demands and has a right to expect that he can obtain care at least equal to the average of medical knowledge without being driven into debt or bankruptcy. Undoubtedly the almost universal adoption of compensation for industrial accidents has started people thinking and they properly inquire why, if they are entitled to protection from accident chargeable against the business in which they are concerned, they are not entitled to insurance against illness chargeable to the same source. Compulsory health insurance was long ago instituted in Germany and not so long ago the so-called "panel system" of health insurance was put into effect in England. Many people and particularly those dissatisfied with present conditions have heard of these alleged panaceas and believe that they know about them though they are far more apt to hear of their excellencies than of their deficiencies. And finally the widespread demand for protection against illness is part and parcel of the general restlessness of unsettled conditions and the very human though utterly hopeless desire to get something for nothing.

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* Delivered before the Massachusetts Medical Society, June 9, 1920.

COMPULSORY HEALTH INSURANCE.

I do not intend to consume your valuable time with any lengthy dissertation on the much discussed and widely advocated system of health insurance. You are doubtless familiar with the claims made by enthusiastic advocates and most of you have come to an opinion in regard to the propriety of such an arrangement. But in order that no doubt may exist as to my own opinion I will briefly note what seem to me overwhelming objections to this system.

In the first place, as at present advocated in the various bills which are before the many state legislatures of the country, it does not, as far as I am aware, even propose to insure health or to care for the illness of the majority of the population. It is not suggested that any of the systems advocated will have any effect in the prevention of disease or in the diminution of its incidence, and yet the casual minded are rather led to believe that in some mysterious fashion such a result will accrue. It is not proposed, as far as I am aware, to apply this system to all members of the community who are or believe themselves to be financially unable to obtain satisfactory medical attention. It is proposed to apply it only to the workers in industrial concerns where it can be charged against the cost of the business and thus become a tax upon the community which may be borne without being unduly burdensome.

Furthermore, as far as I can judge from the experiments in other countries—and the experiments in England appear very enlightening for us,—the whole tendency of this method is to promote second-rate methods of practice. The fees which the physicians doing this work can be allowed to charge are of necessity low and this tends to attract chiefly physicians of average or less than average capacity. A more serious objection is that it tends to promote what may be called the method of "pill peddling" in medical practice. It tends to perpetuate the methods of one or two generations ago under which the physician made numerous visits but being unequipped with the machinery for precise diagnosis as a rule contented himself with treating symptoms and trusting to the healing powers of Nature. The last twenty years has seen a great effort to get away from this inefficient method, yet now we are asked to saddle ourselves with a system which is as sure as anything can be to restore to respectability this fast disappearing practice. As part and parcel of this same difficulty health insurance does not assume to provide and probably will in practice discourage the tendency to send patients to a hospital where they can be studied with the best results to themselves and the least expenditure of unnecessary time and exertion by the physician. For these reasons it appears to me certain to promote a method of practice unlikely to promote health or to shorten the loss of time from disease.

Another prime consideration is its effect upon the medical profession who give their lives to it. It has been sometimes argued that this and various other methods would tend to make medicine an unattractive calling. From the point of view of the medical practitioner this is a valid objection. From the point of the community, on the other hand, the medical profession can have no rights which the public is bound to respect to its own disadvantage. If it could be shown, which I think it cannot, that this or some other system would promote health, the medical profession would have no case at the bar of public opinion even though it were sacrificed to the method. But it appears to me quite clear that this method of practice will not only fail as a panacea for the health of the community but will debase the practice of medicine so that all parties will be worse off. Obviously under some system comparable to the "panel system" in England, a premium is placed upon the number of visits or calls that a given practitioner can make. From this it follows that it is clearly to his financial interest to see the least serious cases and to visit those who live in his immediate vicinity. Obviously to care for the seriously ill is likely to consume time wholly out of proportion to the fee received and sick patients and those who live at a distance are likely to suffer. It might further be suggested that this system tends to promote the sort of snap diagnosis which flourished in the earlier days of the out-patient clinics of the metropolitan hospitals when they were understaffed and overworked and from which we have been trying to escape ever since.

For these and various other reasons it seems to me clear that compulsory health insurance will inevitably work to the disadvantage of the patient, to the disadvantage of the community and to the very grave disadvantage of the medical profession.

But clearly it will not do for us to assume a negative attitude. If we are unwise enough to sit complacently by, it is wholly probable that some system will be put in force which we believe entirely unsound. As evidence of this probability may be taken the situation in England where the organized medical profession opposed the system suggested by Mr. Lloyd George and to a considerable extent refused to assist him in working out some satisfactory method. As a result he went ahead on his own responsibility and there resulted the "panel system" which now bids fair to be most useful as a warning to the unwary.

STATE MEDICINE.

The phrase state medicine is commonly used to convey some ill-defined arrangement by which the state shall become the responsible source of medical practice. It is probably often intended to convey the idea that all physicians should become salaried officers of the state. In this form it is probably rarely used as a constructive suggestion but is intended like the Democratic Party in the days following the Civil War to serve as a threat rather than as a plan. There is, I believe, no sound reason for believing that medicine could thrive in such an atmosphere. At best such a service would be comparable to that now existing in the medical establishments of armies and navies the world over and in this form it is notorious that lack of inspiration and degeneration more or less inevitably follow.

But if we are inclined to object to it on the ground that it will injure the personnel of medicine there will not be lacking those who will oppose it upon other grounds. It is certain to be opposed by those who advocated what they pleased to call "medical freedom" and who yearly appear before our legislatures in opposition to bills proposed in the hope of improving the condition of the public health. It will also be opposed, and not without reason, by those whose business it is to determine how such a method should be financed. If these officers of the state are to be paid sufficiently large salaries to command the services of really first-class men, the bill will be little short of staggering and, coupled with the steady tendency to saddle the state with many expenses which have in the past been thought unnecessary or of private concern, will probably not commend itself to the average legislature.

In this form, therefore, I think we need not consider it in the light of a present possibility. If, on the other hand, we understand this somewhat loose phrase to mean progressive assumption on the part of the state of responsibility of health questions, such a situation now exists. More and more the state has been assuming responsibility for certain phases of medicine, chiefly in the field of preventive medicine, and enormous improvements have been made in comparatively recent times. To progress along this line there can be no valid objection and it is not inconceivable that the time may come when we shall be willing to advise the state to enter more and more into the field of curative as well as of preventive medicine.

If, construing the phrase still more widely, we understand by state medicine the assumption by communities of responsibility for the care of the sick we then approach a phase of the question which is inviting and one in which there is much evidence that activity looking toward definite change is widespread.

We rightly believe that our knowledge of the complicated business of looking after the sick entitles us to be heard. I believe there is no reasonable doubt that we shall be heard if we have a constructive plan and equally little doubt that if we should unwisely confine our efforts to obstruction that we shall receive, if possible, less consideration than we deserve. It is therefore with the hope of stimulating discussion and thought rather than with any overweening confidence that I have a wholly satisfactory plan to propose that I desire to invite your attention to a possible line of development which appears to me at least worth considering.

ESSENTIALS OF A SATISFACTORY METHOD OF PROVIDING MEDICAL CARE OF GOOD GRADE FOR EVERYONE.

Whatever method we adopt must aim to insure to every member of the community satisfactory medical treatment without requiring him to accept charity or go into debt. It must allow a reasonable freedom of choice or if choice is to be restricted must guarantee a high grade of medical skill. It must reasonably distribute the cost so that it shall not be unnecessarily burdensome and finally it must not interfere with the proper development of the science and art of medicine. We might, perhaps, lay more stress upon this latter point and insist that any system to be satisfactory must show evidence of actually promoting the development of medicine.

In attempting to suggest a method of improving present conditions it is only proper to recognize that various experiments are being tried and with varying though considerable degrees of success.

INDUSTRIAL MEDICINE.

This phrase is often loosely used to cover the medical establishments which have been set up by employess for the purpose of caring for their employees. For many years these establishments have been growing and have now been carried to a high degree of efficiency. There can be no manner of doubt that many of the great industrial incorporations now provide for their employees an amount of medical care which closely approaches the ideal. They have wisely provided well trained physicians properly paid and organized their work on a system or variety of systems which would go far to solve the problem if it were satisfactory to what one might call the insured. But it is commonly true that the employees for one reason or another dislike this method. It is alleged that they suspect the evidence of paternalism. It is alleged that they object to this limitation of their freedom of choice and it is alleged that the corporations use the method to their own advantage. Though these allegations may appear shadowy and unsubstantial, there is probably some basis for the widespread belief that the problem will not be solved in this way. To my mind the greatest objection to this method is that it is a solution carried out privately but charged against the community in the heightened cost of production and yet the community has no voice or control in its management. On the other hand, there is no doubt that these establishments have served and are serving a very useful purpose. For the time being, at least, they give time for the orderly discussion and consideration of the problem and they provide an immense amount of what one might call experimental evidence on the methods of managing industrial accidents, diseases and conditions arising within industry. Whatever method may be finally adopted we shall owe a considerable debt to these pioneers in this method of caring for the sick upon a large scale.

GROUP MEDICINE.

The phrase "group medicine" has of late years come into vogue to cover what almost amounts to partnerships between the specialties of medicine. These groups are a serious attempt to solve the problem which we are discussing and have undoubtedly promoted efficiency in the diagnosis and treatment of disease. The chief objection to regarding them as the best method of solving the problem is that they are only incidentally constructed for the benefit of the patient. This benefit consists more largely in increased efficiency than in decreased expense. It is certainly true that in many of these medical groups the financial benefit of the group rather than of the patient has been the commanding consideration.

THE COMMUNITY HEALTH CENTER.

By whatever method we may finally decide to care for the health of the community, the fundamental proposition upon which it is based must be that the public health is a public concern. From this it follows that the soundest method will be that which is based upon community consciousness. For this reason I look to some development in the now rather vague field covered by the phrase community center for the solution of the problem.

A great variety of possible developments may be here included. In its simplest form a community may provide itself with a Director of Health whose business it shall be to coördinate existing agencies, encourage coöperation, discourage duplication, and promote efficiency. In this form it is already in operation in various parts of the country. But it may be doubted whether without more means at his disposal such a director will obtain results at all commensurate with the effort expended. A slight advancement from this plan is to provide such a director with a staff of physicians whose business it shall be to keep in touch with the medical activities of the community and go further than he himself could go along the line of influencing medical practice by suggestion and publicity. But again, this arrangement falls short of providing sufficient power and does not enable the director and his staff to exert the authority of public opinion which must at the last analysis always be the ultimate authority.

One of the clearest signs of the times is the tendency of medical practice to group itself about hospitals, and there can be no doubt that in the future of medicine the hospital will play an increasingly important part. For this reason it has appeared to me wisest in any scheme looking to the provision of care for all members of the community to start with the hospital as a basis and create what might be called the hospital center, whose function it should be not only to provide care within its wards but to radiate medicine in the community at large. This possibility appears to me attractive, but to be successful it must have a far broader conception than the municipal hospitals with which we are all familiar. It must take its authority from an educated public opinion which knows, broadly speaking what it wants and is prepared to employ experts to obtain it. Undoubtedly such a method can be worked out most easily in comparatively small communities where there is a small city and a large area of surrounding country ultimately dependent upon the city for medical service. Under such conditions one might well conceive that some such machinery as the following would work with considerable satisfaction.

The Hospital. Such a community might construct and own a hospital with sufficient capacity to take care of something more than the average number sick not only in the city but in the surrounding district which it must serve. It is perhaps not necessary that this should be calculated to provide accommodations for those who ordinarily avail themselves of private physicians and private hospitals. But, on the other hand, if such a hospital is to be in fact a health center, it should be constructed so as to provide everything which that community wants for the care of its bodily ills. Obviously in communities of large population, it may be wise to construct several such hospitals, as there is undoubtedly a working unit in hospital construction beyond which efficiency of operation is sacrificed. But for the moment let us assume that a hospital of no gigantic dimensions will fill the bill and let us further assume that it is planned to provide accommodations for all sorts and conditions of men.

The Board. In charge of this hospital must be a group, perhaps called a board, who properly represent the wishes of the community, and I believe that this board should serve without pay, so that the only motive for service on the board will be an abiding desire to serve the community. This board must provide itself with a general manager who must, I believe, be a physician, in order that he may be reasonably familiar with the problems with which the board must deal. Such general manager or director must have large powers in executing the policy of the board.

The Staff. The board must next provide itself with a staff capable of covering the entire field of medicine and medical research and this staff must be at the service of the community. The problems involved in the selection of such a staff are obviously considerable, particularly if such a hospital is to be started in a community already supplied with a sufficient number though perhaps not a sufficient variety of capable physicians. Clearly this staff must be of more than average skill and equally clearly their skill and qualifications must be beyond reasonable doubt and therefore must be determined by some authority having no interest beyond the determination of the facts. In order to avoid difficulties the board would probably be well advised to avail itself of the advice of the directors of great medical centers who are constantly engaged in the training of experts in every field of medicine. In order to obtain and retain the services of such a staff, proper salaries must be paid and it may well appear that the provision of such a sum of money will bear heavily upon the community. This difficulty may, I think, in part be solved by allowing this staff to practice in the ordinary sense of the word and to collect fees from such patients as are able to pay. As the staff, when under this arrangement, would consist of well trained, capable specialists, it would certainly follow that their services would be in considerable demand in the community and that their income from this source would go far to make up the guaranteed salaries which they would be assured of by the board. From this it would result that the community through the board would pay only the balances and might conceivably not have to pay at all.

The Patients. Some difficulty will undoubtedly arise in determining what patients are entitled to free care and treatment, what patients should be partly free and what patients can defray their own financial obligations. This difficulty, however, is at least much diminished if we assume that this is in fact a community hospital. It is not difficult if proper machinery be provided to ascertain what are the living conditions of any individual and what is his income relative to his obligations. If we cannot assume that the community really wants to promote its own health and is willing to take any reasonable steps in order to do so, then of course this method will fail, but so will any other method, and on this line of argument the whole proposition becomes insoluble.

OPEN VERSUS CLOSED HOSPITALS.

The medical profession will of course be vitally interested in the question of whether this community hospital is to be what is called "open" or "closed." It is, I think, generally admitted that if one has regard only for a high grade of efficient medical practice the closed hospital is likely to give the best results. On the other hand, it is practically a contradiction of terms to refer to a closed hospital as a community hospital. A closed hospital at once denies the freedom of choice which is generally admitted as essential if it is to command the confidence and support of the community. Physicians who are barred, though in good standing, will obviously not send their patients to a closed hospital unless they be compelled to by fear of disaster either to the patient or to themselves. It cannot, I think, be successfully contended that a closed hospital can satisfactorily serve the whole community and therefore some sacrifice of efficiency is necessary in the interest of the community operation. The answer to this dilemma perhaps lies in a combination of the two methods. The staff provided by the community must obviously look after those patients who are unable to pay and also such other patients as desire their services. Beyond this, the hospital might well be opened to all reputable physicians with the proviso that the board shall have the power to exclude any physician whose work does not match up to a reasonable standard of excellence.

But such a hospital will not have performed its functions if it stops here. It is growing more and more difficult to provide satisfactory medical care for the small villages and the scattered populations of the outlying districts. I am firmly of the opinion that provision for such care is entirely within the function of the community hospital and that unless it serves this purpose it will fail to radiate medicine and consequently fail of its purpose. The work now done by isolated physicians attempting to cover a large area of territory could well be taken over by the hospital, whose business it would be to establish throughout the surrounding country small centers provided with a young physician and one or more nurses. These people would be constantly in touch with the hospital staff, thus obtaining advice, consultation, and comfort. While they should be integral parts of the hospital staff they should be movable rather than fixed and this service should be regarded as a part of the training of the younger men who intend to fit themselves for the practice of medicine in its broadest sense. This line of development seems to me particularly interesting and attractive. It would enable such a community hospital to offer a variety of opportunities, particularly to younger medical men whose capacities are unknown and who might in this way, better than in any other, have an opportunity to survey the broad field of medical practice. The same proposition would hold true as regards the nurses associated with these smaller centers. They would see medicine in its relation to people as is not now possible in the hospital training schools. As a result they would not only be better equipped for whatever branch of nursing practice they ultimately espoused but they would have larger opportunities of surveying the field and thereby learning their own capacity.

I submit this rough sketch of possible medical development for your consideration. It is obviously incomplete, open to objection and its pathway spread with thorns. I hope that you will find in it the merit of a conscientious attempt at a constructive program based upon the assumption that the community really desires to have its health properly supervised and its illness properly treated. Any scheme which we propose is subject to this consideration, and though it may fairly be doubted whether the community conscientiousness is throughout the country sufficiently developed and crystallized to know its own wants, it is possible that in various places such experiments may be tried and may prove helpful to a final solution.

Original Articles.

AN EXPLOIT IN CONTROL OF INFLUENZA.

THE MEASURES MIGHT SERVE AS IDEAL TO ENFORCE DURING ANY PANDEMIC.

BY J. MADISON TAYLOR, M.D., PHILADELPHIA, PA.

THE following succinct but suggestive report was given at my request by Admiral Casper Frederick Goodrich, U. S. N. (retired), who was in command of the naval, army and civilian unit at Princeton University during the pandemic of influenza in 1918.

The facts briefly were these: Admiral Goodrich had under his command all told about 4500 young men. He called his officers together and stated that, as commanding officer he expected them to coöperate fully, to report any suspicious condition, whether symptomatic or inferred. All precautionary measures were clearly outlined well in advance. They proved absolutely complete and efficient and were enforced with military authority. *No deaths* occurred and only an extremely small group of disabilities. My intention was to "write up" the account. It seems, however, that no elaboration could improve this concise presentation of the facts. These were submitted to me by Admiral Goodrich in the following form:

(1) Appreciation of the gravity of the situation while the influenza was still remote; preparation well in advance of the exigency.

(2) Determination to keep it out and not let it get in.

(3) A disinfecting plant was secured in advance.

(4) Every man entering from abroad was sprayed as to mouth, nose, and throat; put through the disinfecting plant,—the man and all his belongings.

(5) An isolation hospital was established at once (the athletic field and the ample training quarters were used.)

(6) Daily rigid inspection of every man by Surgeon and (or) myself.

(7) All droopy men sent to Isolation Hospital.

(8) Walking cases played on base ball field all day.

(9) Cot cases, in the open all day. These two sets kept in sun and air.

(10) A few bed cases kept within doors.

(11) A sanitary board formed of naval surgeon, army surgeon, and local physician.

(12) Closed all movies, churches and schools.

(13) No one was permitted to leave town except in special instances of urgency.

(14) The latter disinfected on return.

(15) Town put in full quarantine.

(16) About 1000 men from Navy, about 2500 men from the Army, and 1000 students. These figures only estimated, but not far from truth.

(17) Complete coöperation by University authorities, Naval and Military officers.

(18) Result—few cases of influenza, fewer still of pneumonia, and *no deaths.*

(19) The results were due to instantaneous and perfect team work.

DR. MARSHALL LEBANON BROWN, of Brooklyn, a retired Fellow of the Massachusetts Medical Society, died at the home of his daughter in Flatbush, Long Island, May 5, 1920, at the age of 83. He was born in New Ipswich, New Hampshire, April 18, 1837, graduated M.S. at Dartmouth in 1861, served as assistant surgeon New Hampshire Volunteers during the war and took his medical degree at Dartmouth Medical School in 1867. He settled in Brighton in 1869 and joined the Massachusetts Medical Society, being retired in 1908. Recently he had lived in Brooklyn. His death was due to heart disease.

DIFFERENTIAL DIAGNOSIS OF DISEASES OF THE HIP-JOINT IN CHILDREN.

By Arthur T. Legg, M.D., Boston.

[From the Orthopedic Department of The Children's Hospital.]

A great many conditions with origin remote from the hip-joint may refer their primary symptoms, accompanied by physical signs, to an affection of this joint. On account of the great variety of these conditions the diagnosis is often mistaken and, at times, there is great difficulty in differentiating them from affections of the joint itself. This fact has led the writer to classify the final diagnosis of one thousand consecutive cases entered at The Children's Hospital Out-Patient Department with a diagnosis of hip-joint trouble, or where the chief complaint has been referred to this joint by the patient.

The attempt will be made to bring out the essential points in the diagnosis of these conditions by comparison with the symptoms of hip-joint affections, and the difficulties in reaching a correct diagnosis of both.

CONGENITAL.

Congenital Dislocation. Congenital dislocation is generally not recognized until the child commences to walk, when a marked limp on one side is noticed if unilateral, or a waddling gait if bilateral. Physical examination will show an inch or more shortening when one hip is involved, the trochanter above Nélaton's line corresponding to the amount of shortening and abduction markedly limited, with limitation of internal or external rotation depending on whether the head is dislocated anteriorly or posteriorly. On manipulation the head may be felt above the acetabulum. The case will show a positive Trendelenberg sign.

When both hips are dislocated the legs are generally of equal length or may differ slightly, one hip being higher than the other. A marked increase of the lumbar lordosis is noticed in bilateral cases, and although present is much less in unilateral ones. The roentgenogram will confirm the diagnosis.

Coxa Vara. While very rare, coxa vara may occur as a congenital deformity. The physical signs are identical with dislocation, except that on manipulation the head cannot be felt above the acetabulum and generally little if any limitation of rotation. The roentgenogram will confirm the clinical diagnosis. While coxa valga may occur as a congenital deformity, the writer has never seen it as such.

Shortening. A slight variation of an eighth or even a quarter of an inch in the length of the right or left leg is very common, and often goes unrecognized, but any greater variation will in time become apparent, either by a limp or by pain about the hip, arising from the strain thrown on this joint by the short leg. A markedly short leg will of course be recognized soon after birth, but cases where the variation is from a quarter to three-quarters of an inch may go unnoticed for some years.

A girl of seven years was seen by the writer, having suffered from pain about the hip for two months. There was limitation of motion with marked spasm of this joint and one-half inch shortening of the leg. Roentgenological examination of the hip was negative. Protective treatment and the equalizing of the legs by building up the shoe on the short side permanently relieved these symptoms. These same symptoms of strain may occur in the hip of the longer leg.

It is impossible, of course, to differentiate in some cases between a congenital shortening and retarded development on one side.

NUTRITIONAL.

Scorbutus. Scorbutus, while primarily occurring more often in other joints than the hip, yet quite frequently simulates an infectious process in the hip-joint. The usual history given is that the child cries out when handled, and in very young children it is very difficult to locate the seat of trouble. When the hip-joint is involved there will be tenderness about the joint with limitation of motions from spasm and at times thickening. The temperature may be elevated and the white count increased to a slight degree.

The history of the feeding will usually give a clue to the diagnosis, and if, in conjunction with the pain, there are purpuric spots on the gums (when teeth are present), this will be confirmed.

The roentgenogram will show a sharp penciling of the cortex, osteoporosis, and periosteal thickening where superiosteal hemorrhage has become organized.

It should be remembered, however, that scorbutus may be present, though rarely, in a case where a nonsterile food and even orange juice are being given.

Rickets, Coxa Vara and Valga. Acquired coxa vara and valga from rickets may give rise to symptoms of strain or synovitis in the hip-joint and be evidenced by pain and spasm from the altered mechanics.

In coxa vara the physical signs are the same as in congenital coxa vara. Signs of rickets elsewhere, such as enlarged epiphyses, rosary, square head and prominent abdomen will be present. The roentgenogram will show the lessened angle between the neck and shaft of the femur, and if the rickets be acute, will show a small and irregular epiphysis with an irregular flaring or fan-shaped diaphyseal end.

Osteomalacia. While osteomalacia is very rare before puberty, this condition is mentioned from the fact that a case came into this series, having been brought to the hospital on account of sudden pain about the hip three days previous, following which the child was unable to walk. There was a fracture of the upper shaft of the femur due to osteomalacia, which was unrecognized up to this time. The roentgenogram of osteomalacia shows a marked osteoporosis and thinning of the cortex.

NERVOUS.

Hysteria. The majority of hysterical joint affections are seen after puberty, but they are not at all uncommon in children. As seen in the hip, the child "over does" the symptoms of the hip trouble. These come on suddenly, with considerable complaint of pain without apparent cause, and the joint will usually be held in a deformed position, allowing no motion. Negative roentgen examination, absence of temperature and etiological history, with sudden onset and shifting areas of tenderness point strongly to a hysterical affection. With the child's mind diverted the hip, by persistent gentle pressure, can be brought to its normal position. The diagnosis of a hysterical joint should be made, of course, with the greatest hesitancy.

Chorea. The writer recently saw a boy of seven who had had a peculiar limp for two weeks and was brought for advice on account of this and indefinite pain about the hip. All examinations were negative. On careful observation the arms showed slight choreic movements. In a few days his case could be diagnosed as a typical chorea.

Pseudo-muscular Hypertrophy. As in the case of chorea just mentioned, a boy was brought to the hospital with a limp and indefinite pain referable to the hip-joint. A careful and complete examination showed markedly well developed lower legs, with extremely weak muscle power, and he rose from the floor by climbing on himself, a typical picture of pseudo-muscular hypertrophy.

TRAUMATIC.

Strain. Strain of the muscles about the hip, and at times those of the lower back and the sacro-iliac joint, may cause symptoms pointing entirely to the hip-joint. The spasm in strain of the muscles about the hip will cause limp, limitation of motion and pain,—and with an active child who does not think of a slight wrench or bruise, it may be difficult for some days to rule out a more serious affection of the joint itself. In the case of lower back strains, and that of the sacro-iliac joint, tenderness, if present, will be localized in this region, with possibly limitation of motion of the lower back from spasm, but the motion in the hips will be free.

Synovitis. Unlike a strain about the hip-joint a traumatic synovitis is generally easily diagnosed, as a trauma severe enough to produce a synovitis can be remembered by the child, and a definite history of trauma, followed soon after by pain and limitation of motion, can be obtained.

Separation of the Femoral Epiphyses. On the face of things, it would seem that separation of the epiphyses should be one of the easiest, if not the easiest, condition of the hip on which to make a diagnosis; but the writer has seen many cases go for weeks without a diagnosis being made. This failure to diagnose arises from the mistaken idea that it is not considered possible for a child after a fall producing separation of the epiphysis, to get up and walk. Yet, nevertheless, it not infrequently happens that a child, after such a fall, will get up, go home and go to bed, or sit about on a chair, suffering perhaps considerable pain, but not severe enough to suggest a fracture. If examined, the leg will be held in eversion, but eversion is present in practically all affections of the hip, traumatic or not; there will be limitation of motion, differing in no respect to that following a simple trauma; *Crepitus* may *not* be *elicited;* shortening, if only a quarter to a half inch, may be easily overlooked, especially in a fat individual; shortening of more than this cannot, of course, be missed. This case may limp about for a few weeks, and then be considered to have been a severe trauma of the hip. A roentgenogram would have immediately settled the diagnosis.

Almost identical with this hypothetical case was that of a boy seen by the writer. He was playing ball and in sliding to the base felt a fairly severe pain in the hip. Although not continuing the game he stood about watching its completion. He consulted no physician, and after a few weeks considered himself over the trouble. A roentgenogram taken a year later for indefinite pain in the hip, revealed the exact nature of the injury.

A girl of twelve, who came under the writer's care, had separated the epiphysis of the femur by stubbing her toe while stepping up on

Flattening of the Upper Femoral Epiphysis. This condition was first described by the writer in 1909. Up to that time it had been classed amongst various affections, most commonly that of tuberculosis.

It is a non-tubercular condition characterized by limp and limitation of motions, especially in abduction and internal rotation, without pain or constitutional symptoms. The roentgenogram shows a flattening of the epiphysis into a "cap type," where the epiphysis is flat and narrow; or a "mushroom type," in which it is flattened and spread out. There is also a thickening of the neck, giving the appearance of a coxa vara.

It is mistaken for tuberculosis from the fact of its gradual onset without early marked symptoms. The prognosis of this condition is, however, always favorable.

EXTRA-ARTICULAR AFFECTIONS.

Bursae. The ilio-psoas and gluteal bursae when inflamed, give symptoms referable to the hip-joint on account of their anatomical relation to the muscles about this joint. The former lying on the ilio-psoas muscle will cause flexion of the thigh, and from its spasm, limit the motion of the joint. The latter may cause entire loss of motion of the joint when the gluteal muscles show marked spasm. Infection of these bursae are as a rule acute and will usually show local tenderness.

Glands. Retroperitoneal glands when infected, and abscess formation has ensued, will gravitate downward and, if in contact with the psoas muscles, will produce flexion and limitation of motion of the hip, with pain referred to the hip-joint, as did the ilio-psoas bursae. Flexion and external rotation are usually possible. These glands are generally acutely involved with symptoms coming on suddenly and with temperature. The gland thickening or fluctuation can be felt above Poupart's ligament.

Appendicitis. An inflamed appendix causing no abdominal symptoms whatever is very rare. Four such cases, however, have come under the writer's observation and have sought advice solely on account of pain about the right hip, limp, permanent flexion, and limitation of motion being present. In these cases abdominal examination has shown a mass in the right iliac fossa, which on operation was proved to be an appendix abscess.

An errand boy with definite pain about the right hip for two weeks, continued work, with some limp, up to the day before seeking advice, when the pain grew much worse, the right thigh becoming flexed. On entrance to the hospital the thigh was flexed 45 degrees. Flexion and external rotation were free, but other motions absent. His temperature was 102 degrees. On abdominal examination a mass could be felt just above Poupart's ligament. Operation showed an abscess from a ruptured appendix.

AN ABDOMINAL EXAMINATION OF EVERY CASE SHOULD BE MADE.

Pott's Disease. Tuberculosis of the lower dorsal, lumbar and sacro-iliac region will give rise to symptoms in the hip, from irritation of the psoas causing limp from the contracted psoas, and referred pain from irritation of the nerves resting on it. Many such cases of early tuberculosis of the spine have sought advice wholly on account of supposed hip trouble.

A thorough physical examination will decide the diagnosis.

Infantile Paralysis. A child of seven complained to his mother, in the morning, of pain in the hip and of a slight headache. As there was severe pain in the hip on walking he was kept in bed and a physician called. He found limitation of motion of the joint, with considerable pain and tenderness and sent the child to the hospital the next day with the diagnosis of "beginning hip trouble." There the examination of the hip was as above described; his foot, however, was in an equinus position with inability to raise it. From this something more than trouble at the hip was suspected, and he was kept under close observation until the next day, when he developed complete paralysis of this leg.

It is not at all uncommon for an infantile paralysis to manifest its first symptoms by sensitiveness about a joint.

Osteomyelitis. Acute osteomyelitis of the bones of the pelvis, the neck and upper shaft of the femur, coming on as it does very suddenly, with high temperature and pain, may simulate at its onset an acute infection of the hip-joint itself, as all motion in the hip is usually lost very early from muscular spasm, and the pain produced from infection at any of these locations will be referred to the hip-joint. As soon as thickening can be felt some idea of the location of the process may be obtained, but occasionally there is no thickening about the trochanter, and the exact seat of infection cannot be determined until operation.

Increase of the white count is dependent on the child's resistance.

The roentgenogram in these acute bone infections, when taken early, may be of *no* benefit in determining the diagnosis.

In the cases of chronic osteomyelitis of the bones about the hip, the history obtained and the early physical examination may be identical with that of tuberculous hip-joint disease. Thickening in the cases of chronic osteomyelitis, however, can usually be felt earlier than in tuberculosis. In these cases the roentgenogram is all important in deciding the diagnosis and showing the seat of trouble.

Cellulitis. An early cellulitis of the upper thigh may, as in osteomyelitis, suggest trouble in the hip-joint by limiting motion at the joint by muscular irritation.

Bone Abscess. As with the cases of chronic osteomyelitis, the localized bone abscess of the upper shaft or neck of the femur may simulate tuberculosis of the hip-joint very closely, and the roentgenogram must decide the diagnosis.

Bone Cyst. In cases of bone cyst of the upper shaft or neck of the femur, there may be indefinite pain about the hip with limp and spasm, causing limitation of motion of the joint, and the diagnosis can be made from the roentgenogram taken on this account. In the majority of these cases, however, the condition is not recognized until from a slight fall the femur is fractured at the site of involvement, and the diagnosis is made when the roentgenogram is taken.

Malignant Bone Tumors. Malignant bone tumors of the upper shaft or neck of the femur may, clinically, as in the cases of chronic osteomyelitis in these locations, strongly simulate tuberculosis of the joint, and from the roentgenogram, differentiation between these and chronic osteomyelitis or bone abscess cannot often be made. The diagnosis is generally suspected at operation and made by the microscope.

Syphilis. Syphilis, as it manifests itself in giving rise to symptoms referred to the hip is generally seen as a periostitis of the upper shaft of the femur. Clinically the symptoms are identical with those of the aforementioned chronic bone infections, and the diagnosis must be suspected by the roentgenogram, and confirmed by the positive Wassermann reaction.

AFFECTIONS OF THE JOINT ITSELF.

Haemophilia. The manifestation of haemophilia in the hip-joint, while not so common as in the knee-joint, may at times simulate tuberculosis, by the pain, tenderness and swelling about the joint; but usually the joint symptoms come on more rapidly. A previous history of multiple spontaneous ecchymosis, with the family history of bleeders (in males), will determine the diagnosis.

Acute Infections. Acute infections of the hip arise primarily or secondarily to the acute infections elsewhere; such as pneumonia, typhoid, the exanthemata, teeth and tonsils and autoinfection. They start as a synovial infection or an acute epiphysitis breaking through into the joint.

By the sudden onset an acute infection can be diagnosed, but as with acute infections outside the joint, the exact location of the seat of infection cannot be made out until thickening can be felt, and this, at times, especially in a fat child, is very difficult. In the very young, also, the evidence afforded by pain may be very deceptive, as they usually cry out and resist any palpation or movement to any part of the leg Clinically to get joint thickening is of prime importance. The roentgenogram will show a distended capsule with the femoral head pushed out from the acetabulum to a slight degree.

The importance of the early recognition of these acute joint infections cannot be overestimated, as when over distended the capsule will rupture, producing a dislocation, or when the infection starts as an epiphysitis, without very early operative interference, the head will become detached and destroyed.

Chronic Infections. The chronic infections of the hip-joint, other than tuberculosis, may, as in the acute infections, be secondary to any of the acute infections, but occasioned by a much attenuated germ. The clinical picture may be identical to that of tuberculosis, and it is at times most difficult to differentiate the tuberculous and non-tuberculous infections.

Given a case of chronic hip-joint infection following soon after an infection elsewhere, or a child with carious teeth, or with a history of repeated attacks of tonsillitis, a non-tuberculous origin of the infection is very probable; but even so, the most careful observation should be made of the case before making a positive diagnosis.

The white count may not be increased.

In tuberculous infection of the hip the majority of cases will give a history of "intermittent limp," which is rare in the non-tuberculous cases, and to the writer's mind this history of onset is of the greatest importance.

The Von Pirquet reaction, while of little importance if positive, when negative is of great importance in ruling out tuberculosis as the etiological factor.

The roentgenological study of the chronic non-tuberculous infections in the early cases is generally negative, but may show some distention of the capsule.

This is also true of the very early tuberculous cases; but in these cases the roentgenogram will later show the "general increased radiability" of the head and neck, which is characteristic of the tuberculosis, and which is not seen in the non-tuberculous infections.

It is, therefore, at times a matter of the greatest difficulty to differentiate between the tuberculous and non-tuberculous infection of this joint, and impossible until the case has been thoroughly studied.

A most careful history should be obtained.

A most complete physical examination should be made.

A roentgenogram should be taken in every case of suspected bone or joint disease; and every laboratory method at our disposal should be used before making a positive diagnosis.

It is not with the idea of complicating the diagnosis of hip-joint diseases that this great variety of conditions is mentioned, but to point out the fact that all the aforementioned affections may refer their initial symptoms to this joint, and that it is at times most difficult to differentiate them.

At the same time, the writer desires to emphasize the extreme importance of early differentiation whenever possible.

DR. JACQUES BELHOMME—PRINCE OF PROFITEERS.

By J. W. Courtney, M.D., Boston.

During the recent world war the view was frequently emitted by certain non-combatant philosophers, comfortably ensconced in their favorite arm-chairs a hundred leagues and more behind the firing lines, that the outstanding product of the greatest shambles known to history would be the purification and ennoblement of all humanity.

Since the signing of the armistice, practically everything in the attitude of man toward man and nation toward nation gives the lie direct to such fatuous and jejune vaticination.

Among honest men existence was never more drab or sorry than at present, for this is the harvest season of the most fearsome and contemptible of all human vultures—the profiteer.

This undesirable citizen by no means dates his existence from the recent war. Manifestly, his prototype was known to Moses, for in Leviticus xxv: 14, the latter speaks as follows: "And if thou sell ought unto thy neighbor, or buyest ought of thy neighbor's hand, ye shall not oppress one another."

Profiteers have flourished in every period of great public distress—the result of war (international or internecine), plague, earthquake or crop failure—since the beginning of time. It was to them that Cicero's plaintive reproach, "O, cives, cives, quaerenda pecunia primum est; virtus post nummos," was addressed.

Representatives of every stratum of society are found in their loathsome ranks. Taine, in his *Origines de la France Contemporaine*, tells us that it was cupidity as well as hunger which drove the revolutionary French peasantry to forcible seizure of storehouses and granaries, and instances cases where the precious contents of these repositories were generously disposed of by the same *sans-culottes* to their affamished brethren at a modest profit of one hundred per cent. In this connection it is not without interest to note that the attention of the infamous Constituent Assembly of revolutionary France was but indifferently occupied with the case of one Gerdret, accused of having furnished to the army boots *with cardboard soles,* on the afternoon of the fateful twentieth of November, 1792, when Roland burst in upon it with the newly discovered private papers of Louis XVI, a find which served to send that monarch to the guillotine.

Of all the profiteering band which the present writer has come upon in his miscellaneous reading, no other figure is quite as interesting as that of *Doctor* Jacques Belhomme. It appears that in 1787 this philanthropic alienist, with a keen eye to favorable environing conditions, established a comfortable "Retreat" on the vine-covered highland of the rue de Charonne in the suburbs of Paris. The success of the establishment was quickly assured. Within less than two years it counted forty-six inmates, of which number but nine were "voluntaries." Among the latter was a certain *abbé* who suffered from the fixed idea that he was a famous actor and wore himself out trying to declaim tragedies in their entirety, without any stop for breath.

When the Revolution broke out, Dr. Belhomme—a liberal, like many other physicians—was named captain in the company, Popincourt, and had the happy inspiration to offer to his section the "Retreat," the purpose being to shelter there, for a consideration, and under pretext of arthritides to be nursed and quartan fevers to be cured, rich suspects to whom the prospect of a sojourn in a vulgar prison was eminently distasteful. The doctor was on excellent terms with several powerful men of the new régime, his proposition was accepted, and there soon began to arrive at the "Retreat," from all the jails of Paris, prisoners with swollen incomes who, although hated aristocrats, managed by force of *pourboires* (!) to procure this favor.

It was indeed a favor, as one may judge by the fact that, while the agents of the public accuser recruited daily their guillotine fodder from the jails of Sainte-Pélagie, the Madelonnettes or l'Abbaye, it was a matter of comment that, through grant of a very special privilege, not a single soul who found refuge with Dr. Belhomme was hailed before the tribunal. Furthermore, it was well known that although the revolutionary air of other parts of Paris was peculiarly mephitic for aristocrats, that which circulated about the grounds of the spacious, vine-covered "Retreat" in the rue de Charonne was, for them, salubrious beyond words. There the cerberus on guard was as tame as a house-cat, the bars at the windows pleasantly inconspicuous and not overladen with unsightly padlocks. One was permitted to saunter at will about the grounds, and there were no restrictions with respect to visitors. In brief, the "Retreat" soon became for the poor hounded suspects among the aristocracy a coveted oasis which Death, ever stalking elsewhere, never approached—a sort of enchanted isle of an Arabian Nights tale. Incidentally, it was whispered about that Belhomme had obtained for his house "a tacit protection" very lucrative for everybody concerned. There were those who had the temerity to assert that there was a personal "arrangement" between the doctor and no less a person than the public accuser, the redoubtable Fouquier-Tinville, by which the latter was pledged not to *annoy* the doctor's *house guests.*

It is not remarkable, under the circumstances, that Belhomme was soon almost at his wits' ends to find lodgment for an ever-increasing clientèle. The fact that he enjoyed the able concurrence of a self-appointed band of *runners*, among whom one Vilain (!), who, for a paltry five or six thousand pounds, made admission practically certain, surely did not serve to relieve his embarrassment. But he was eminently obliging and resourceful and, if one were not averse to somewhat exiguous quarters, there was always available a corner in the garret at four hundred pounds a month or a cosy little sleeping apartment for three at five hundred. In the end, however, it became necessary for the doctor to rent a neighboring hotel—The Chabanais—which vast gardens separated from the "Retreat."

Life at Dr. Belhomme's was very gay. In the evening a long file of carriages was drawn up before his door. Within there was gaming, laughter and music; and not the least note of liveliness was that contributed by the prettiest actress of the Théâtre-Français, Mlle. Lange, and by her chum, Mlle. Mézerai, neither of whom could bring herself to take the Red Terror seriously enough to repulse the attentions of opulent adorers.

It is true that the gay company of "voluntaries" were at times exposed to annoying contact with the "certified" patients (maniaco-depressives and dements, disturbed by the hurly-burly of the household) whom Dr. Belhomme, despite his understanding with the reigning powers, was unable to evacuate. But, after all, where life is at stake, one quickly grows tolerant of petty vexations, and it must have been most comforting to the "voluntaries" to feel that their own heads were not only not cracked but still firmly attached to their shoulders, while those of friends and relatives were daily dropping into the gathering-baskets of the guillotine, to be paraded later on pikes by frenzied viragos through the streets of Paris.

As a business man, Dr. Belhomme was noteworthily straightforward and clean-cut. He wasted no words in making it crystal-clear to his "patients" that his sole concern was a purely medical one—the preservation of life. His fees were on an ascending scale, payable monthly; and at the end of each month it was compulsory for everybody in the "Retreat" to liquidate. Incidentally, it was prudent to bargain for the next month's respite from the scaffold, for the unfortunate who could not hope to pay was immediately transferred to the Conciergerie, St. Pélagie, or some other prison not under the protection of the public accuser.

Let it not be inferred from the doctor's business methods that his manner toward his patients was voluntarily harsh or hateful in any way. On the contrary, he tolerated their antic frolicsomeness with paternal good nature. Indeed, he did not conceal from them his weakness in allowing himself to harbor a strong attachment for them, and it was always with the chill of death in his heart that he announced to those whose resources were at an end that he found himself under the dire necessity of sending them to the guillotine. It is related that he compelled, with such fatherly tenderness, the charming duchess Béatrice-Yvonne de Choiseul, who could not pay his "fees" and was unrightfully usurping the place of a solvent client, to listen to reason, that they parted the best of friends, the duchess going to the Conciergerie and thence, in a few days, to the scaffold.

The one thing Belhomme could not tolerate in his clients was ingratitude. "Really," said the duchess du Chàtelet to him one day, in the somewhat affected manner of the *grande dame* of the *ancienne cour*, "really, Monsieur de Belhomme, you are unreasonable and, to my keen regret, I cannot satisfy you."

"Tut, my plump one," replied the jovial doctor, "be a good girl, I'll make you a rebate of twenty-five per cent." But, even at this figure, the duchess was unable to continue to pay her "pension." She was compelled to quit the establishment, and a few days later died on the gallows. This catastrophe scattered consternation in the "Retreat" Belhômme. The doctor himself was visibly affected by it and remarked, by way of pointing an example, that "her ladyship perished the victim of ill-advised economy."

In order that he might not overlook any available funds in his protegées' possession, he employed the services of a *citizeness*, variously called Chabade and Chabanne, whose principal duty was to levy taxes. That this factotem had a busy time of it may be judged from the fact that the sums paid by the individual guests monthly to the doctor in person—sums which varied in amount from four hundred to a thousand and more pounds—secured for them absolutely nothing beyond four sheltering walls. Everything else—hair dressing, heating, laundry-work, furniture, coffee, cream, sugar, ... etc., was extra,—the last-named commodity holding all records for altitude on the part of prices.

When the citizeness was not occupied with these ordinary levies, she busied herself with certain gleanings—*surprises* the resourceful doctor called them. The ingenious notion was his own. These surprises took the form of *Collections for the Section, Offerings to the Patriots, Subscriptions to the Saltpetre Fund,* . . . . . etc. Their object was to make sure that no last pieces of gold should lose weight by attrition in the purses of the guests.

The common table of the "Retreat" was notoriously bad. There were no fixed hours for service. Luncheon might be at two in the afternoon or six in the evening, so it came to be the custom to form a bread-line at the dining-room door and make a frantic rush for the tables directly the door was thrown open. Each table of thirty covers had food for eight persons only. Naturally, it was a case of "the devil take the hindermost." One could, to be sure, have meals sent in from the outside, but the argus-eyed citizeness was ever on the alert, and upon every importation of this sort there was levied a customs duty, either in money or in kind—fruit, a cutlet, or a bottle of wine—and it was of these preliminary levies in kind that their hodge-podge of a *table d'hôte* was composed.

Small wonder that Belhomme's speculation—the "Retreat"—was fruitful and the dividends "important." Small wonder, also, that he hoped that the Revolution would go on forever. But such was not to be his happy fortune. The Popincourt section conceived the troublesome idea of sending to his peaceful institution two penniless prisoners in the philanthropic hope that the poor devils might live on the crumbs fallen from the tables of the rich. There were no crumbs. Belhomme lamented the fact and sought to extricate himself from the dilemma by taking up a collection from his protegées in favor of the intruders. This expedient yielded next to nothing in the way of practical results. The intruders became noisily exigent. The doctor exhorted them to resignation, reminding them that even the most exalted of the nobility under his care were content with the ordinary rations. The intruders were inexorable and embodied all the rancor of their outraged sensibilities in a denunciation of the citizen Belhomme, which was forthwith despatched to their section, and which charged him with "exercising vexations, exactions and extortions, demanding from the rich exorbitant sums, paid in advance, and treating inhumanely the poor *sans-culottes* less favored by fortune."

In consequence of this denunciation, in which the inhumane treatment of the poor *sans-culottes* is so touchingly stressed, Belhomme was placed under arrest and charged with extortion and incivism. By a sort of poetic justice he was, in course of time, interned temporarily in a rival *maison de santé,* where an indelicate confrère administered to him heroic doses of his own medicine. Thence, by a verdict of the criminal tribunal, he passed to the galleys to "do a stretch" of six years.

After the doctor's enforced departure the "Retreat" was "courageously administered," so the archives tell us, by Mme. Belhomme, for, it appears, there was a Mme. Belhomme. However, with the advent of the 9th Thermidor, her duties could not have been onerous, since, after that auspicious date, the only remaining inmates were a few dements interned before the Revolution.

Belhomme returned to his institution in the Spring of 1798, after serving four years of his sentence. The original Mme. Belhomme was not there to welcome him. Whether she had meantime died, or whether she had passed out of his life through the medium of the divorce court, is a matter which will probably never be determined. We do know, however, that the worthy man, then sixty-one years of age, lost no time in entering into marriage contract number two—the new spouse being but twenty—and that in happy union with this new directress he carried on the "Retreat" for a further period of twenty-six years, at the end of which time he died. By the most singular combination of circumstances imaginable his relict remained in absolute ignorance of both his own shady character and that of his institution during thirty years of her widowhood. And when the truth was finally laid bare to her through the published Souvenirs of one of the hated aristocrats who had found asylum with the doctor during the Red Reign, she indignantly characterized the revelations as a tissue of falsehoods. Thus was virtue ever rewarded.

PSYCHICAL RESEARCH AND THE PHYSICIAN.

By J. Danforth Taylor, M.D., East Boston, Mass.

Sir Oliver Lodge, an eminent English physicist, has recently delivered lectures in this country upon the subject of "Discarnate Intelligences, Telepathy (thought transference without the use of the senses), and the Reality of Psychic Force."

Many physicians of a skeptical nature will laugh at the idea and pass it by with little or no thought as to the consequences. It is most essential, however, that medical men should realize the import of such influences and use their utmost power to combat such theories.

In England, where the whole country has been stirred up by the teachings of Sir Oliver Lodge, Dr. Conan Doyle, and others, a great wave of mediums and fakirs has overflowed the island, reaping a rich harvest from the unwary and credulous.

After one gets a message from a departed loved one and has had mental troubles relieved, the next step is to seek the same measures for the relief of bodily ailments. Here lies a danger that may invade the province of medicine.

Several years ago, the author of this article pointed out, in a paper entitled "Emotional Religion and Mental Impairment," the danger of brain lesion under extreme emotional stress.

The same danger to the people exists today as a result of indiscriminate experiment and investigation in "spiritualistic" fields.

The craze for "psychism" is liable to spread through all ranks of society, the result being an accentuation of the increase in morbidity, in neurasthenia, and in downright insanity.

The freak religions tend to become medicinal. They are offered for their healing properties, and persons accepting them and not dying of the first ailment suffered, give them the credit for working a miracle. A Biblical text is often used as the basis of authority for the founding of a healing cult, such as the eleventh and twelfth verses of the nineteenth of Acts: "And God wrought special miracles by the hands of Paul; so that from his body were brought unto the sick handkerchiefs or aprons, and the diseases departed from them, and the evil spirits went out of them."

Sir Oliver Lodge has been justly criticized as being incapable of good scientific work along those lines because of his lack of training in biology and psychology, and partly through temperamental reasons, whereby his bias unconsciously lowers his critical standard, so that he is continually giving the benefit of the doubt to mediumistic phenomena and omitting to take obvious precautions against fallacies.

Scientific belief should depend solely on the weight of evidence and not on the controversial usefulness of some hypothesis. Before a supernormal explanation is invoked, it is a good rule of philosophy to exhaust the possibilities of the normal, and so coincidences, as an explanation, can be excluded only when the chances against any particular combination are almost infinite.

Scientific proof also demands the possibility of the repetition of the observations under conditions which are understood or can be controlled in order that verification of the facts may take place.

Sir Oliver Lodge's book, "Raymond," is an example where his bias has unconsciously lowered his critical standard; the work being full of such defects. His simple trustfulness is also shown in his report on the work of the medium, Eusapia Palladino.

The record of "Mrs. Brittain," Sir Oliver's latest medium, is worth studying. She made claims of "clairvoyance" in 1910, in England, advertising her marvelous powers of thought transference. One of the English police, disguised as a farmer, paid her a visit. She not only made a number of incorrect guesses about his circumstances, but her so-called "clairvoyant" powers failed absolutely to recognize his connection with the police. She was arrested and convicted for fortune telling.

The things which scientists call untrustworthy observations, Sir Oliver calls facts. The same applies to Conan Doyle, who is most dogmatic in his statements.

Is it not a waste of time to make observations so long as the conditions are such that fallacies cannot be excluded? To accept conditions of a so-called "medium," to submit to inferior conditions, is to unconsciously lower one's own critical standard.

Under the emotional and unscientific conditions of the "sittings" with the mediums the judgment becomes warped and one becomes impressed by phenomena which leaves the critical reader quite cold.

William James pointed out that "continuous sittings will almost always produce a cumulative effect on the mind of the sitter whose affairs they implicate, and dispose him to the spiritistic view. It grows first plausible, then possible, then natural, and finally probable in a high degree."

J. F. Rinn, a former member of the Society for Psychical Research, who took part in the exposure of Palladino, and who has made a hobby for years of exposing so-called "supernatural" phenomena, recently offered $5,000 if anyone could produce a medium who could offer under scientific conditions, the slightest evidence of communication with the spirit world or supernatural feats of any kind.

There is no limit to the range of scientific inquiry; but knowledge can be advanced only by taking every possible precaution against fallacies, and when this is done, phenomena requiring supernormal explanations are conspicuous by their absence.

The realm of spiritualism affords an excellent field of investigation for the psychologist and psychiatrist, and also for the sleight-of-hand performer who would learn new tricks.

As psychology is the description and explanation of states of consciousness as such, all the emotions, sensations, desires, volitions, reasonings, decisions and cognitions come within the scope of its investigation.

The demonstrable manifestations of the hidden workings of the subconscious mind are well known to science. They give a natural explanation for "spirit communications."

Just as the gods of any religion are inductions from experience, and religious "experiences" are states of consciousness and are therefore proper objects of scientific investigation, so the investigation of "spirits," as such, comes within its scope.

The physician is supposed to be a scientific man, trained to use rational methods of research to prevent and alleviate disease, whether mental or physical. It is his first duty to protect his business, his own peculiar method of specialized industry, by which his intellectual labor obtains its pecuniary reward.

His method of preserving public health is based on the knowledge derived from a study of the various natural phenomena. While medicine is not an exact science, its votaries strive to use scientific methods in all their undertakings.

Primitive man assigned life to all objects, animate or inanimate. All life is of the same kind and, therefore, the primitive philosophy assumes the possibility of life passing on to another form, a point of view that is illustrated in the folk tales and myths, so widespread, of men being changed into animals or trees.

This theory survives in advanced forms of religions in the doctrine of the transmigration of souls, as in Buddhism, where the same vital essence, it is assumed, may appear successively in a tree, in an animal or in man. In another direction it leads to the belief of the incarnation of a deity in human form, a belief found in many religions. (A Hebrew peasant, called Jesus the Christ, was an example, a believer in spirits and demons.)

Men in the primitive state pictured all disease as being due to some active, living force that has found its way into the body. The conclusion is a natural one and, in a way, seems to have anticipated the modern germ theory.

A cure, therefore, involves the expulsion of the hostile power and the medical treatment was usually exorcism; for the imagination of primitive man conceived the germ as obliging enough to take on tangible shape.

Some modern religions have developed a dualistic theory, whereby a spirit or soul inhabits a material body and leaves that body at the time of the death of the physical body. It bears a definite relation to the theory held or attributed to primitive man, and is most readily adopted by the credulous, emotional and simple mentality.

Just as the priests and parsons are the mediators between a god and mankind, and develop a powerful organization for personal profit from the "believers," so the medium acts as the middleman between the "spirit" and the message-seeker.

Both systems appeal to the primitive and childlike mind. The search for discarnate intelligences has already become more than a cult and its adherents are many. Drawing the attention of man from the realities of this world to the frictions of an imaginary one, has resulted in religious doctrines entailing much misery to mankind.

So far as civilization has any definite aim, that aim must be the increase of human happiness. The means to the attainment of this object are material comfort and prosperity. The removal of ignorance and the growth of knowledge are, therefore, necessary to the development of happiness.

A system of dogmatic religion of any kind, such as "chasing the spirits," depraves morality, benumbs the mind of man and debases human nature.

Where in the realm of science has a discarnate intelligence been found? Is there any reason why we should not apply the same methods of investigation in studying the unknown that we use in studying the known?

Has science ever demonstrated any dualistic nature of man, any separate entity apart from the matter of which the body consists? Mind is looked upon as the functioning power of the brain, but how can a mind or intelligence exist apart from the brain, a material product?

In 1916, the Open Court Publishing Company, of Chicago, brought out a book entitled, "Behind the Scenes with the Mediums," by D. P. Abbott. Any physician who wishes to become a "medium," a message-reading, slate-writing, and table-tipping expert, is referred to this work.

It is the duty of the physician to combat all cults that are not based on scientific facts. And furthermore, it is time that all medical men place themselves on record as *defenders of science* and as opponents of those things which impede progress, impair the mind of man, and subjugate his mentality to a parasitic class.

Go to the Psychopathic Hospital and tell the physicians there that you have had messages from the dead, that you are in communication with spirits, and that you have "psychic" powers and see what will happen. You will at once be classified as one who is suffering from delusions, hallucinations or illusions, according to your story, and the chances are that you will be detained for further observation, as to your sanity. "Who ever heard of a psychiatrist who believed in spirits?"

Modern medical science has fought its way from the primitive belief in exorcism and magic, to the rational administration of various remedies for the cure and prevention of disease.

Every step in its advancement has been met with opposition by organizations claiming divine authority, and the office of mediator between the known and the unknown world. Without the use of incantations, prayers, holy bones, holy relics or blessed shirts, medical science has become one of the true and actual saviors of the human race.

The realm of spiritualistic phenomena is largely "bunk or fake" and sleight-of-hand. It is the sum total of all the superstitions of the past, the destruction of which has always been the chief purpose of science. The science of psychology and psychiatry gives a natural and sane explanation of spiritual phenomena.

Let the medical profession unite for further victories in the interest of humanity.

Clinical Department.

PERFORATION OF THE CECUM. A CASE REPORT.

By Edward H. Risley, M.D., F.A.C.S., Boston.

It is desired to report the following case because of interesting points in postoperative findings and because of the several postoperative complications with eventual complete recovery.

M. M. C. was seen at 4 A.M., December 23, 1918, after having been in bed one week with an attack of epigastric pain, nausea, and vomiting, and obstinate constipation accompanied by temperature varying from 97.2° to 100.4°. Because of a previous history of a chronic "stomach trouble," with acute exacerbations, the present attack was diagnosed, in the absence of lower abdominal signs, as probable gall stone colic, by the attending physician. Not until 1 A.M. of the day I was called in had there been any signs or symptoms of a possible lower abdominal lesion. At this time, however, the temperature had gone to 102°, there was violent pain in the whole lower abdomen, and rigidity in the right lower quadrant.

Examination showed an abdomen typical of acute, ruptured appendicitis with beginning general peritonitis. The upper abdomen was soft and only very slightly tender to palpation. There was no evidence of obstruction. Immediate operation was advised and accepted. The patient was brought to Boston and was operated on at 6 A.M., ether being administered by Dr. Freeman Allen.

On opening the abdomen, a large amount of foul, colon-smelling, yellowish-green fluid and pus escaped, which also carried with it a strong odor of turpentine, and, when an entirely sloughed-off, gangrenous appendix with a perforation of the cecum 1¾ cm. in diameter was found, it was taken as undoubted evidence that the fluid free in the peritoneal cavity was none other than the turpentine enema given a few hours before the sudden onset of right lower quadrant pain. This apparently marked the time of perforation of the very necrotic appendix and cecum.

The cecal opening was closed with a zero gut stitch, three cigarette wicks placed; one to the stump, one to the right flank, and one to the pelvis and the wound closed in the usual manner. The patient was returned to bed in very good condition but because of the general peritoneal involvement a bad prognosis was given.

He had a stormy convalescence, septic petechiae developing over the chest on the fifth day. On the eighth, seventeenth, and twenty-first days there occurred profuse secondary hemorrhages from deep in the wound. The patient was fortunately reached by me very soon after the onset of each hemorrhage, gas was given, the wound inspected—no bleeder found—and the wound packed. After the second hemorrhage the patient's condition was so precarious that Dr. G. W. W. Brewster was called in consultation but advised against any operative interference. Patient made uninterrupted and satisfactory recovery without transfusion, after the third hemorrhage, and was discharged February 14, 1919, in excellent condition.

He remained well until about August 1, 1919, when he began to have sudden severe attacks of acute epigastric pain, without nausea, vomiting or distention. Attacks were often relieved by enemata, but might come on shortly after an unaided stool in the morning. Attacks thought to be due to adhesions involving colon,—probably the transverse portion. Attacks continued at rather regular intervals in spite of careful diet, mild laxatives and occasional enemata.

September 4, 1919, entered Deaconess Hospital to be under observation while gastrointestinal x-rays were being taken and so that patient could be watched during an attack.

Patient previously seen by Dr. C. H. Lawrence, who considered condition probably due to adhesions and spasm. Dr. Morrison's report showed absolutely no evidence of adhesions or obstruction and no pathology in relation to the stomach. In conversation with me regarding this case, Dr. Morrison stated that had he not known that the patient had had a previous general peritonitis, he should never have known from the x-ray findings that the peritoneum had ever contained any adhesions.

Patient had no attack during a week's hospital observation but on the night following his arrival home he experienced the worst attack he had ever had. No relief was obtained from atropin or several doses of morphia. The temperature was reported by the attending physician as 101° and the patient was advised to return to Boston for further study. He was seen by Dr. C. H. Lawrence and myself at 7 P.M., on the day of his attack. Temperature was 100°. There was mild pain, but the physical examination was absolutely negative. There was no distention. Even deep palpation could elicit no tenderness, rigidity or spasm anywhere in the abdomen. Operative interference did not seem indicated and it was thought best to see the patient in an attack if possible. However, on September 11, 1919, the temperature went to 102½°, the white count previously 18,000 to 28,000 and the patient looked sick for the first time, and a very slight amount of tenderness was found in the epigastrium, more to the left than to the right of the median line. This corresponded to the site of most of the previous pain complained of. Operation was advised and accepted. Ether was given by Dr. William L. Dodge. The abdomen was opened through a median epigastric incision. Much to my surprise, the whole peritoneum, as far as could be inspected and palpated, showed absolutely no signs of past or present inflammation. It looked like a virgin peritoneum everywhere; even at the site of the old infection there were only a few fine adhesions of the cecum to the abdominal wall. The total absence of any sign of the old diffuse and virulent peritonitis was a very suprising revelation. No pathology was found in the stomach, colon, pancreas, or intestine. Finally, a small tongue of omentum was seen pointing downward toward the right kidney region, and, tucked far underneath the costal margin and very deep in the flank, a gall bladder distended to the size of the fist was found. A cholecystectomy was easily done and on section the bladder was found distended with thick, foul pus, whose drainage was prevented by the impaction in the cystic duct of one small mulberry stone. Three cigarette drains were placed and the abdomen closed.

The patient made an uneventful and satisfactory recovery with flat, normal temperature. All wicks were out and the patient was preparing to go home in a few days, when on the eighteenth day the temperature rose to 101°, patient had a chill, and a diffuse, deep red rash appeared on chest and abdomen. The abdomen was soft and there was no tenderness. There was a little serum from the wound. The next day temperature went to 103½° and the patient was lobster-red all over. In Dr. Lawrence's absence, was seen by Dr. William

B. Robbins, who could find no evidence of scarlet fever and a diagnosis of toxic erythema was made. That night the temperature went to 105° and the white count to 32,000. The patient's condition seemed desperate. Suddenly at 1 A.M., he began to perspire and did so so profusely that his bed had to be changed three times during the night. At 9 A.M., the temperature was normal and remained so until discharge twelve days later. Patient has remained perfectly well ever since, has gained weight, and shows no ill effects from his almost overwhelming but fortunately short-lived toxemia.

The points of especial interest in this case are the following:

a. Finding of a recently given turpentine enema free in the abdominal cavity, its entrance being through perforation in the cecum where a completely gangrenous appendix had been sloughed off. The question may, of course, be raised as to whether or not the turpentine enema did not actually produce the perforation or at least hasten it by several hours.

b. Recovery from general peritonitis and three secondary hemorrhages occurring as late as the eighth, seventeenth, and twenty-first days after operation.

c. Later finding of "virgin" peritoneum with no adhesions even after so severe a peritonitis.

d. Unusually late, overwhelming, but short toxic erythema with sudden onset and equally sudden recovery.

CONGENITAL CYSTIC KIDNEY: REPORT OF CASE.

By H. Green, M.D., Boston,

Junior Assistant Visiting Physician, Children's Hospital.

[From the Medical Service of the Children's Hospital.]

In looking over the records of the Children's Hospital I have found only three cases of congenital cystic kidney. It is a rare condition in infancy. The condition is usually found bilateral. The contents of the cyst are usually clear but may be tinged with blood pigment. Virchow believed that the condition was one of retention cysts due to fetal nephritis. Another theory is that the condition represents a true developmental anomaly, with the formation of cysts instead of normal renal tissue (Ranvier).

A third theory is that the condition is due to the failure of the developing tubules to unite with the corresponding glomeruli or an excess of either glomeruli or tubules and cyst formation in the supernumerary structures.[1]

If the kidneys are of normal size, as they may be, there will be no symptoms. If the kidneys are large the condition will be considered among the abdominal tumors of infancy. The prognosis depends on the amount of parenchyma involved. In the tumor type death usually occurs in early infancy.[2]

Report of Case: E. C., two years old. Came to the Out-Patient Department of the Children's Hospital.

Family History. Only child of healthy parents. No exposure to T. B. or contagious disease. One miscarriage before child was born.

Past History. Full term, normal delivery. Birth weight, 6½ pounds. Breast fed six months. Since that time was fed on mixtures of proprietary foods and condensed milks.

Present Illness. Past eight months child has had spells of "getting blue," coming usually in the morning. Has had them every day for the past week. Usually last fifteen minutes. Mother has also noticed a yellowish-white discharge on the diaper. Urine has been dirty white. Eyes have been puffed, but mother has not noticed that the body was swollen. Appetite good. Cough for past two weeks.

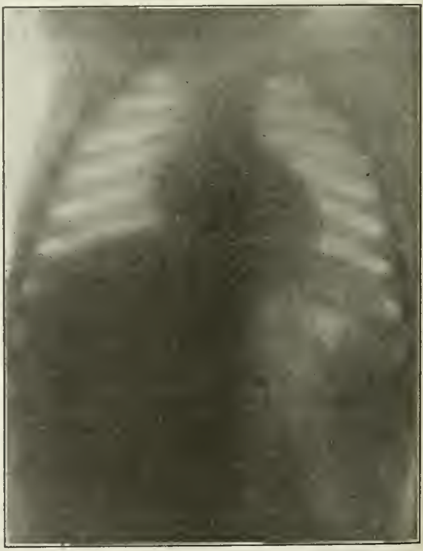

Fig. 1.

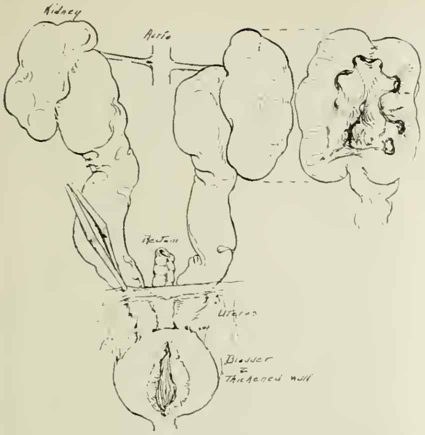

Fig. 2.

Physical Examination. Very flabby. Fontanelle closed. Throat reddened, no glandular enlargement. Chest respiration noisy as though there was some obstruction. Lungs clear. No râles. Heart sounds regular, no murmurs. Abdomen held tense; legs in position of knock knee.

On account of peculiar respiration child was sent to the throat room. No foreign body in throat or lungs. X-ray taken. Interpretation: Tracheal stenosis from thymic pressure. One month later child entered hospital in a moribund condition. Family and past history as above. Was admitted to hospital wards. History: At birth was a very pink red baby, had no blue attacks. Between nine months and one year of age parents noticed that child became definitely blue at times and seemed lifeless. These attacks have continued at varying intervals. For the most part they have been noticed during defecation. These attacks of blueness were at about one month intervals. Two months later had an attack of blueness and the doctor found it was due to marked difficulty in respiration. Came to the Out-Patient Department one month later and was breathing hard at this time. X-ray was taken at this time and diagnosis of tracheal stenosis from thymic pressure was made and she was referred to the x-ray department for therapeusis. She was given four treatments, the last one five days previous to entrance. The week previously the child was so well, treatment was omitted. Since the last treatment the breathing has become worse. For two days previous to admission the child seemed much worse. Has had a cold the past few days.

Physical Examination. Well developed and nourished child, exceedingly sick, looks pale and lips are blue. Extremities cold, pulse very weak. Temperature 96. Respiration labored and noisy, most marked stridor being on expiration. Head, normal size and shape; anterior fontanelle closed and depressed. Ears negative. Nose, pinched expression; alae nasi dilating with each inspiration; slight serous discharge. Eyes, pupils slightly dilated and react to light. Mouth, normal; throat clean. Neck, no stiffness; glands slightly enlarged. Chest, well arched, symmetrical, equal expansion. Lungs, no dulness, no abdominal breath sounds, no râles. Heart, normal size, no murmurs. Abdomen, level, soft, tympanitic, no tenderness, small mass lower right quadrant, hard, about the size of a walnut and movable. Liver edge 1-1.5 cm. below costal border. Spleen not felt. Kidneys were not felt. Genitalia negative. Extremities normal. Reflexes normal. Ophthalmoscopic examination normal. Carbon dioxide tension (Marriott and Howland method) 10-15. Catheter specimen of urine: Milky, cloudy, acid, 1003; sugar, 0; acetone, 0; albumin, positive; microscopic examination, broken down pus cells. Child was given stimulation but did not respond, and died.

Autopsy. Four hours post mortem. Body is that of a poorly nourished, poorly developed child. Length 75 cm. Skin is smooth, elastic and pale, except for slight lividity of the back. Parietal eminences are prominent. Anterior fontanelle is closed and depressed. Pupils are equal and measure 4 mm. No discharge from nose or ears. No palpable nodes in neck. Epiphyses are enlarged at the anterior end of the ribs, and the lower ends of the bones of the forearm and the lower legs. There is slight anterior bowing of the lower legs 4 cm. above the ankles. Rigor mortis is present.

Abdominal cavity: Subcutaneous fat is pale yellow, 4 mm. thick. Omentum is scanty and contains a small amount of yellow fat. Intestines are pale, and distended with gas and contain numerous firm fecal masses, particularly the cecum. Appendix is small, 6 cm. in length, with a long mesentery. Peritoneum is smooth and glistening. There is no free fluid. Diaphragm is at the fifth interspace on the left, and at the fifth rib on the right. Pleural cavities: No free fluid. Pleura is smooth and glistening. There are no adhesions. Pericardial cavity: No free fluid. Pericardium is smooth and glistening.

Heart: Weight, 50 grams; tricuspid valve, 2.4 cm.; pulmonary valve, 1.8; mitral valve, 2.1; aortic valve, 1.5; left ventricle 0.3; right ventricle, 0.1. Heart muscle is firm and deep red in color. Endothelium is smooth and glistening. Cruor clot fills all chambers. Heart valves are all translucent and smooth. Coronary arteries are patent. Subpericardial fat is scanty. Pericardium is smooth and glistening.

Lungs: Surface is smooth and shiny,

dark red, mottled with brown. Cut surface is pink and exudes a frothy fluid on pressure. Lungs are crepitant throughout. Bronchi contain a little mucus, but their lining is smooth and pale, and they contain no foreign bodies.

Organs of the neck: Tongue is moist and red, with many firm nodules 2 to 4 mm. in diameter on its upper surface near the base. Tonsils are firm, pale, 5 mm. across. Epiglottis is 9 mm. long and covers a tracheal opening 4 mm. across. Trachea is empty and its lining smooth, white and glistening. Thymus extends down in front of the tracheal bifurcation for 3 cm. on each side, in thickness it is 2 to 3 mm.

Spleen: Weight, 27 grams. Surface is deep purple, glistening, and slightly wrinkled. There are five notches along the outer border 3 to 5 mm. deep. Cut surface is dark red with a delicate tracery of fine white lines and tiny gray dots between them.

Gastrointestinal tract: Oesophagus is of uniform diameter throughout, its lining is smooth and white. Stomach is of moderate size, free from adhesions; its outer surface is smooth and pink, its inner pale and plicated. Intestine is thin-walled, pink, and in its lower portion the Peyer's patches are present. Lining of cecum is red, that of the colon, pale. Mesenteric lymph-nodes are numerous, firm, and average 7 mm. in diamter.

Liver: Weight 250 grams. Surface is smooth, shining, and dark purple. Consistency is firm. Cut surface is chocolate-brown with the lobules standing out as brown spots. Gall-bladder is small and thin-walled. Bile-ducts are patent.

Pancreas is firm and of good size. Cut surface is yellowish, with white lobulations.

Adrenals are 2.5 cm. in length. Cut surface shows the normal markings distinctly.

Kidneys: Each measure 6.5 cm. from pole to pole, average 2.5 cm. in width and 2.5 cm. in thickness. Foetal lobulations have persisted. Capsule is adherent, leaving an uneven, reddish surface. On section, the cortex is 5mm. thick in places, elsewhere markings are lacking, the kidney tissue being a uniform pink. The calyces are very large, some of them extending to within 6 mm. of the outer surface of the kidney; their lining is 1 mm. thick, white and opaque. The pelvis of each kidney contains 15 to 20 cc. of cloudy, white urine, and its wall is 1 mm. thick, tough but not reddened. Both ureters are greatly dilated, being 2 cm. in diameter over a large part of their course, and entering the bladder as thick-walled ducts 5 mm. in diameter.

Pelvic Organs: Bladder is smooth and white on its outer surface, its wall is 3 mm. thick, and inelastic; and its inner surface is wrinkled, white, with innumerable red dots. It contains 40 cc. of cloudy, white urine. Urethra is patent. Uterus is 2 cm. long, 1 cm. wide, and 3 mm. thick, firm and pale. Ovaries and oviducts appear to be normal.

Anatomical Diagnosis: Congenital cystic kidneys; congenital dilatation of ureters; chronic inflammation of bladder; emaciation.

REFERENCES.

[1] Garrod, Batten, and Thursfield: Diseases of Children, p. 618.
[2] Dunn: Pediatrics, p. 458.

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Book Review.

The Autonomic Functions of the Personality. By Edward J. Kempf, M.D. New York and Washington: Nervous and Mental Disease Publishing Co. 1918.

This interesting volume is an analysis of behavior stated in psychoanalytic terms and also in terms of the autonomic nervous system. It really is devoted to a study of the influence of the autonomic nervous system upon the structure and behavior of the individual. The old distinction of mind and body in the make-up of personality is gradually being eliminated, on the one hand by Adler, who approached the problem of the neurotic character from the organic rather than the functional side, and on the other by this recent contribution of Kempf on the psychology of the emotions and the part they play in the personality of the individual.

It seems from Kempf's material, that the old James-Lange theory of peripheral origin of the emotions, which had been gradually relegated to the scrap-heap of outgrown ideas, has been here revived and made more basic in the light of the newer studies of the vegetative nervous system. According to the writer, affective cravings or emotions have a peripheral origin in certain motor-sensory functions of the autonomic apparatus. The autonomic functions of the organism tend to utilize and organize the proficient functions so as to acquire a maximum of gratification for the environment with a minimum expenditure of energy. The author sees in the autonomic nervous system the primitive means for recording the organic cravings of the individual and in the cerebrospinal system, the means for adopting the organism to its environment so as to secure a satisfaction of its cravings.

The familiar psychoanalytic concepts of conflict, repression and the unconscious, thus receive a new interpretation in anatomical and physiological terms. It is a useful book for those interested in the problems of normal and abnormal behavior, particularly from the standpoint of determinism. Dr. Kempf has done his work well and in a masterly fashion.

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IMPROVEMENT IN HOSPITAL SERVICE.

Every state medical association in the United States has its part in the present universal movement for the betterment of hospital service. Every association now has its own committee which is studying the hospital situation in its state in coöperation with the Council on Medical Education of the American Medical Association. The Council has obtained, through reports, correspondence, and other methods, data relative to all large hospitals in the country and each state committee has been supplied with the data relating to the institutions in its state. Through closer familiarity with the hospitals, or by inspections, the state committee can verify these data and make a reliable report to the state association and to the Council. The committee in Massachusetts is: Dr. R. L. DeNormandie, Boston; Dr. E. L. Davis, Springfield; and Dr. Homer Gage, Worcester.

For convenience and in order to secure uniformity of reports from the forty-eight committees regarding the relative efficiency of hospitals, blanks furnished by the Council call for a rating of all hospitals in classes A, B and C, grouped also according to the special class of patients cared for. This rating is not for publication but will aid the Council in the preparation of a list of hospitals which are considered worthy of approval. These lists are subject to frequent revision so that the names of other hospitals can be included as soon as sufficient improvements are made to warrant their being approved. State committees are urged to report promptly to the Council any instances where such improvements have been made.

The purpose of the work is to aid the hospitals in providing for their patients the best possible service. It is in no way to injure those which are honestly endeavoring to provide such service. To help along, every possible assistance will be given to individual hospitals by the Council or by the local state committee in establishing such changes as will make them worthy of approval.

Forty-two state committees have reported progress in connection with the latest survey and thirty-four have turned in reports regarding hospitals inspected and graded, which have more than half the entire bed capacity of all general hospitals in the country. Meanwhile, this work of the Council is not conflicting with, or duplicating the splendid work being done by the American College of Surgeons, the Catholic Hospital Association, the American Hospital Association, or other agencies. In fact the work of each agency is evidently complementing that of the others.

At the recent meeting in New Orleans, the House of Delegates of the American Medical Association registered an intense interest in the improvement of hospital service and authorized the trustees to provide generously for that work. This work has been so intimately related to that of the Council on Medical Education that the name of this Council was changed to the "Council on Medical Education and Hospitals."

Further enlargement of hospital work by the American Medical Association is assured and in this work each state is destined to have an important part. Toward this end each association is urged to make its hospital committee permanent and to retain on it not only those who will be active but also those who can do the work in the most efficient and unbiased manner. Hospitals, at present, form the closest link between the medical profession and the public, and the medical profession should do all it can to aid the hospitals to provide the very best service possible.

THE TREATMENT OF TUBERCULOSIS IN GENERAL HOSPITALS.

At the present time, with thousands of cases of tuberculosis among discharged soldiers entitled to medical aid and treatment at the hands of the Public Health Service, we find ourselves confronted by the fact that practically nowhere will general hospitals admit this class of patients; moreover, there is almost everywhere throughout the United States a lamentable shortage of hospital facilities for those ill with tuberculosis. The opening of general hospitals to this class of patients would do very much more than provide relief for a large class of unfortunates; it would undoubtedly contribute enormously to the efforts now being made to control tuberculosis.

As conditions are now, the interne serving his time in any of the general hospitals has practically no opportunity whatever to familiarize himself with the diagnosis and treatment of pulmonary tuberculosis. It is small wonder, therefore, that so large a proportion of the general practitioners fall so far short in their diagnoses of pulmonary tuberculosis. The present practice also fosters the erroneous belief in some miraculous virtue in climate in the treatment of tuberculosis, yet those familiar with the disease recognize that it is the proper use of fresh air which constitutes the valuable element in treatment at the various well-known sanatoria.

In an effort to make better provision for the tuberculous among discharged soldiers, and at the same time to help bring about an improvement in our campaign against tuberculosis, Dr. Hugh S. Cumming, Surgeon General of the U. S. Public Health Service, sent the following telegram to the American Medical Association, while it was in session in New Orleans, La.:

"I desire to urge more active participation by the general practitioner and by general hospitals in the treatment of tuberculosis. To insure earlier diagnoses, properly train internes and other personnel, popularize treatment in the home climate, provide additional facilities. I earnestly endorse the resolution passed by the National Tuberculosis Association in 1916, recommending that general hospitals should admit tuberculous patients and provide separate wards for that purpose. Sanatoriums and specialists in tuberculosis will always be needed and we should have more of them, and I believe that success in the anti-tuberculosis campaign is largely dependent upon first, convenient facilities for observation and prompt treatment of patients with open tuberculosis; and second, in a sharpened perception and higher degree of skill by which the family doctor will make early diagnosis or even forestall the development of clinical tuberculosis in the adult before a definite diagnosis is possible. To provide adequate care for tuberculous ex-service men and others, to protect infants from infection, enlist the aid of the general practitioner, allay phthisiophobia, and improve home treatment of tuberculosis, the opening of general hospitals to this most common of all serious diseases will materially assist."

PROPOSED LAW TO PREVENT ILLEGAL ABORTION.

In most large communities there are one or more men who have a right to practice medicine but have so far forgotten their obligations to the profession and the state as to become the murderers of countless unborn children. These men continue to ply their nefarious business although the state has made it a felony punishable by fines and imprisonment. In other words, the punishment does not act as a deterrent. Occasionally a man is punished, but most of them go free although their business is public knowledge in the community. Such conditions are a disgrace to the community and to our country. With little modification of the present laws the practice could be made so dangerous that it would practically cease.

To accomplish this we would recommend that the state recognize that there are conditions which demand the sacrifice of a child for the benefit of the mother; except in extreme emergency, however, no physician should be allowed to perform such an operation without a confirmation of his diagnosis by another physician and after the history of the case has been reduced to writing and signed by both physicians. In those very rare cases where consultation cannot be had the physician performing the operation should be required to file with the district attorney a full statement of the case, which should be accompanied by a history signed by the physician and by the persons furnishing the information. Such a law would protect the reputable physician while it would make it difficult for the illegal abortionist to continue his work.

J. W. Brewer.

MEDICAL NOTES.

The American Pediatric Society.—The thirty-second annual meeting of the American Pediatric Society was held on May 31, June 1 and 2 at the Moraine Hotel, Highland Park, Illinois. Regular sessions were held in the morning, afternoon, and evening of the first day, with a Council meeting at 9 o'clock in the evening. On June 1 a case report session was held in the morning, a regular session in the afternoon, and in the evening there was a dinner followed by a discussion of graduate work in pediatrics. On June 2 a business meeting was held for the members of the society at 9 o'clock, followed by a child hygiene session in the morning and a regular session in the afternoon.

University of Maryland.—The Maryland State College of Agriculture and the University of Maryland School of Medicine has been combined under the name of the University of Maryland by a bill recently passed by the Maryland legislature. The legislature has appropriated the sum of $42,500 for each year for the next two years for the medical school. $186,476 for the use of the other departments of the university in 1921, and $165,416 for 1922. An appropriation of $203,000 was made for buildings and equipment.

Report of Venereal Diseases.—During the month of March, 1920, 23,573 cases of venereal diseases were reported to the State Boards of Health by physicians, clinicians, hospital superintendents, and others, and there were 9,260 new admissions to the clinics operating under the joint control of the United States Public Health Service and the State boards of health. There were administered during the month 26,395 doses of arsphenamine. Six states have not submitted reports.

Medical and Surgical History of the War.—It has been announced that the Surgeon-General of the United States Army has asked for a grant for the publication of the medical and surgical history of the war. A large part of the material for this history has been collected and its publication depends upon the action of Congress. The first portion of an unofficial history of the Canadian Army Medical Corps was completed at the end of 1918, and it is expected that the German history in nine volumes, will be ready this year. Considerable progress has been made already with the British official medical history of the war.

Memorial Medal to Florence Nightingale.—As a memorial to Florence Nightingale and to give international recognition to the work of trained nurses in all parts of the world, a medal was established in 1912 at an International Conference of Red Cross Societies held in Washington. The first awards of this medal were postponed because of the outbreak of the war in 1914; but it has been announced that fifty of these medals will be awarded in 1920. The medal, which is of silver and enamel, bears a portrait of Florence Nightingale and the inscription, "Ad memoriam Florence Nightingale 1820-1910." On the reverse side is the inscription, *Pro vera misericordia and cara humanitate perennis decor universalis*, surrounding a space reserved for the name of the recipient. On a white and red ribbon which is attached to the medal is displayed a laurel wreath in green enamel surrounding a red cross on a white ground.

BOSTON AND MASSACHUSETTS.

Recovery of Hinsdale Physician.—Dr. Willis L. Tucker of Hinsdale, recently struck by a train, has left the House of Mercy Hospital greatly improved and will make a complete recovery.

Measles and Whooping Cough in Boston and Vicinity.—Since the beginning of the year, measles and whooping cough have caused the death of 132 children of school age in Boston and its vicinity, and thousands of other children have been kept from their studies by these diseases. The records of the health department show that the cases of both diseases have been more numerous this year than in the corresponding months of the last ten years. Since January 1 there have been 1383 cases of whooping cough and 85 deaths, and 4798 cases of measles and 47 deaths. This outbreak has been attributed by Dr. Woodward to the fact that there have been relatively few cases of both diseases during the last few years, during which there have accumulated a large number of children who have never had either whooping cough or measles and consequently are not immune to them. He has issued a warning to parents advising them to have children examined at once by a physician if they have a slight cold, watery eyes, a slight cough, or what appears to be a cold in the head.

There has been an average of more than 200 cases of measles reported each week since January 1. One week only 199 cases were reported and in another week only 193 developed; but many of the weeks showed more than 250 additional cases each and at one time 326 cases were reported in a single week. In January there were 12 deaths from measles; in February, 11 deaths; in March, 9; in April, 8. Last year in the corresponding period there was relatively little measles, the records showing only 196 cases and only two deaths. In 1918, in the corresponding period, there were fewer cases than this year, the number being 4,030, but the deaths were more numerous, the number then being 75.

The number of whooping cough cases since January 1 were 1383. In the same period last year there were 250 cases and in the previous year 1047. The deaths this year have totalled 85 as compared with 11 in the same period last year and 56 in the preceding year.

Dorchester Physicians' Wives Association.—The annual meeting of the Dorchester Physicians' Wives Association was held recently, and the following ladies were elected for the ensuing year: President, Mrs. Samuel Crowell; Vice-President, Mrs. William Johnston; Treasurer, Mrs. H F. R. Watts; Recording Secretary, Mrs. M. H. A. Evans; Corresponding Secretary, Mrs. W. C. Emery; Auditor, Mrs. F. S. Parsons; Press Correspondent, Mrs. C. E. Allard. Directors for 1920-21: Mesdames J. W. Lane, A. E. Sherburne, E. P. Day, J. Treanor, W. H. Parker, F. G. Phillimore, G. M. Mason, R. W. Brayton, A. W. Stearns, H. MacLeod.

Springfield Academy of Medicine.—The May meeting of the Springfield Academy of Medicine was held in Springfield on the evening of May 11, 1920. Dr. Arthur H. Crosbie of Boston delivered an address on "Prostatic Obstruction." The next meeting will not be held until September.

Recruiting of Physicians for Medical Corps.—An effort is being made by the Boston district recruiting staff to secure physicians for the Medical Corps, for service in army hospitals and similar institutions. It is hoped that nine thousand medical men may be secured from New England for this service before November 1, 1920. Physicians desiring to remain in the vicinity of their homes while serving in the Medical Corps can be enlisted for the Coast Artillery forts in Boston and other New England harbors, and those who possess the required educational qualifications will be sent to Fort Banks, where they will be instructed in laboratory technique. A school for x-ray manipulation is maintained in Washington, and those who so desire may be instructed in this branch of the service. Application for information about service in the Medical Corps should be made to Major Leonard W. Hassett of the Medical Corps, at 3 Tremont Row.

Massachusetts Dental Society.—At the fifty-sixth annual meeting of the Massachusetts Dental Society the following officers were elected for the coming year: President, Dr. Frank P. Simpson of Pittsfield; vice-presidents, Dr. Frank P. Barnard of Worcester and Dr. William Rice of Boston; secretary, Dr. Edward J. McQuillian of New Bedford; treasurer, Dr. Joseph T. Paul of Boston; editor, Dr. Charles E. Parkhurst of Boston.

Essex North Medical Society.—The annual meeting of the Essex North Medical Society was held at Lawrence on May 5, 1920, and Dr. Alfred Worcester of Waltham and Dr. Howard A. Streeter delivered addresses before the Society. The following officers were elected: President, Dr. D. D. Murphy of Amesbury; vice-president, Dr. F. W. Snow of Newburyport; secretary, Dr. J. F. Burnham of Lawrence; and auditor, Dr. F. N. Coffin of Haverhill.

Nomination of Dr. William J. Brickley as Medical Examiner.—Dr. William J. Brickley of Boston has been nominated associate medical examiner for Suffolk County, to succeed Dr. Oscar Richardson, who has resigned. Dr. Brickley was born in Boston in 1874. He was graduated from Harvard Medical School in 1907 and began practising in that year. He is surgeon in charge of the Haymarket Square Relief Station. Dr. Brickley has been a lieutenant commander in the Navy, and was in active service during the war.

Gift of Five Million Dollars to Harvard Medical School.—The estate of Mr. Joseph R. Delamar of New York, under whose will Harvard, Columbia, and Johns Hopkins Universities are the chief beneficiaries, has been found to be valued at $32,282,927, instead of $20,000,000, the estimate made at the time of his death in 1918. The three medical schools will receive, therefore, the sum of $5,541,401 each.

Visit of European Physicians to Boston.—Five eminent European physicians are making a tour of this country in order to study the methods of medical instruction. They have recently left Boston, where they visited the Harvard Medical School and the leading hospitals in the city, for Philadelphia and Baltimore.

While in America the physicians are the guests of the National Board of Medical Examiners of the United States. They are accompanied through this section of the country by Dr. David A. Strickler of Denver and Dr. Horace D. Arnold of Boston, both members of the national board. They have attended a meeting of the American Medical Association at New Orleans and have visited the leading medical centers of the middle West.

The physicians and the medical organizations they represent are: Sir Humphrey D. Rolleston, Royal College of Physicians of London; Col. H. J. Waring, Royal College of Surgeons of London; Dr. Norman Walker, Royal College of Physicians and Royal College of Surgeons of Edinburgh and the Royal Faculty of Medicine and Surgery of Glasgow; Profs. Gustave Roussy and E. E. Desmarest of the University of Paris.

Addition to St. John's Hospital.—Exercises for the opening of the addition to St. John's Hospital, Lowell, were held on May 11. The institution was established in 1867 by the Sisters of Charity. The new building is of practically the same size as the old St. John's Hospital building, with which it is connected by tunnels at every floor. It is four stories high, finished in red brick, with reinforced concrete and steel entering into various parts of its construction. There are wide corridors, spacious piazzas, and sun porches on every floor, and the roof will be used for the benefit of convalescent patients. In the basement will be located the out-patient department, which will give special attention to women patients. On the first floor there are double private rooms for male patients and also ward beds; the second floor is to be devoted to the children's general ward; on the third floor are private rooms and wards for women. The operating rooms, laboratories, and x-ray room are on the fourth floor.

Health Week at Simmons College.—During the first week in May, a health week was celebrated at Simmons College. The exhibit was arranged for two purposes: first, to tell those who are healthy how to keep their health and to tell those who are not healthy how to become so. The first part of the exhibit, presenting the health facts brought out by the war, took the form of a tented army clinic in charge of Prof. Curtis M. Hilliard, professor of biology and public health at the college. The second part of the exhibit attempted to portray what each community can now do in child welfare, industrial health, tuberculosis, and social diseases; a display was made of material lent by the American Museum of Safety, the National Child Welfare Organization, the Child Health Organization of New York, the Massachusetts State Department of Health, and the Metropolitan Life Insurance Company. One day was devoted to children, who were instructed in the means of bodily welfare. Babies were weighed, and the proper clothing and the method of bathing babies was demonstrated. Professor Hilliard gave a lecture on "The Nation's Teeth," and Professor Howard E. Hamlin, professor of physiology at Simmons, took as the subject of his address, "Stand Straight, Sit Straight, Go Straight." Another speaker was Dr. Valeria H. Parker of Hartford, who is a social hygiene worker for the National League of Women Voters and assistant educational director of the American Society of Hygiene Associations.

BERKSHIRE DISTRICT MEDICAL SOCIETY.—On April 29, 1920, the Berkshire District Medical Society held its annual meeting and elected the following officers: President, Dr. Ayers P. Merrill; vice-president, Dr. George P. Hunt; secretary, Dr. O. L. Bartlett; treasurer, Dr. Charles T. Leslie. At this meeting Dr. Walter E. Fernald, of Waverley, gave a very interesting talk on Feeble-mindedness.

NEW ENGLAND NOTES.

HOG CHOLERA IN VERMONT.—An outbreak of hog cholera has occurred at four farms near Montpelier, Vermont. Dr. A. J. Defossett, deputy commissioner of livestock, has placed these farms under quarantine for forty days, and arrangements have been made for a supply of serum to be furnished at cost to those who apply for it. The farmers have been asked to report immediately any death from the disease. The animals which have been exposed have been vaccinated and none will be allowed to be shipped from the places under quarantine until that is removed.

NEW HAMPSHIRE SURGICAL CLUB.—Surgeons of New Hampshire and Massachusetts attended the semi-annual meeting of the New Hampshire Surgical Club held at St. Joseph's Hospital, Nashua, New Hampshire, on May 4. The morning session was devoted to clinical demonstrations and several unusual and difficult operations were performed. In the afternoon, lectures on surgical subjects were given by Dr. Frank E. Kittredge of Nashua, Dr. J. M. Gile of Hanover, and Dr. J. F. Thompson of Portland, Maine. Dr. Herbert L. Smith, president of the society, presided at the meeting.

WAR RELIEF FUNDS.—The New England branches of the French Orphanage Fund and the Italian Fund have announced the following contributions:

French Orphanage Fund	$594,696.54
Italian Fund	327,902.15

AMERICAN CLIMATOLOGICAL AND CLINICAL ASSOCIATION.

The following preliminary program has been announced for the thirty-seventh annual meeting of the American Climatological and Clinical Association to be held at the Bellevue-Stratford Hotel, Philadelphia, on June 17, 18, and 19, 1920:

President's Address. Lawrason Brown, M.D., Saranac Lake, N. Y.

1. Diagnosis of Myxedema. By James B. Anders, M.D., Philadelphia.

2. Tubercle of the Lung Moderately Advanced: Artificial Pneumothorax — Apparent Cure — Military Service in France—Gun-Shot Wound Penetrating Pneumothorax — Chronic Empyema — Lantern Slides. By J. B. Elliott, Toronto, Canada.

3. Some Aspects of Relationship between Certain Cases of Bronchial Asthma and Pollen-Sensitization. By Walter J. Baetjer, Baltimore, Md.

4. Studies in Vibrations Causing Pulmonary Physical Signs. By Charles M. Montgomery.

5. Study of Cases with Regard to Gastric Sugar Tolerance on Basal Metabolism. By Nelson J. Russell, Buffalo, N. Y.

6. Adrenalin Hypersensitiveness in Suspected and Definite Tuberculosis. By F. H. Heise and L. Brown, Saranac Lake, N. Y.

7. Treatment of Tuberculosis of the Larynx. By Alexius M. Foster, Colorado Springs, Col.

8. Diatetics for the Tuberculous. By J. Madison Taylor, Philadelphia, Pa.

9. Lymphocytosis as a Diagnostic Sign of Focal Infection. By Judson Daland, Philadelphia, Pa.

10. Ultimate Prognosis in Vascular Hypertension. By George M. Piersol, Philadelphia, Pa.

11. A Simple Alphabetical Medical Key-work System for Indexing (Lantern slides). By William J. Mercur, Philadelphia, Pa.

12. Postural Rest for Pulmonary Tuberculosis. By Gerald B. Webb, Colorado Springs, Col.

13. Study of Recovered Tuberculosis Patients by Stereo-roentgenograms. By Bertram H. Waters, Loomis, N. Y.

14. Occupation of the Active and Arrested Case of Pulmonary Tuberculosis. By Bayard T. Crane, Rutland, Mass.

15. Study of Tuberculosis Patients Who Had Influenza during the Epidemic of 1918. By John B. Hawes, 2d, Boston, Mass.

16. W. F. A. Phillips, Charleston, S. C. Subject to be announced later.

17. Empyema, Communicating with Abscess of the Left Breast. (Lantern slides.) By John J. Lloyd, Rochester, N. Y.

18. A Study of the Progressive Changes in the Aorta and Lung as Shown by X-Ray in Tuberculosis and Syphilis. By Cleaveland Floyd, Boston, Mass.

19. Odds and Ends in Tuberculosis. By Charles O. Probst, Cleveland, Ohio.

* * *

RECENT DEATH.

DR. HENRY JAMES MILLARD, a retired Fellow of the Massachusetts Medical Society, died at his home in North Adams, May 30, 1920, aged 84 years. He was a graduate of the Berkshire Medical Institution of Pittsfield in 1864, and had practised in North Adams all his life.

The Boston Medical and Surgical Journal

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THE SIGNIFICANCE OF HEMATURIA. A STUDY OF ONE HUNDRED PERSONAL CASES.*

By Arthur L. Chute, M.D., Boston.

The day I received your Secretary's invitation to read a paper before you, I saw a man who had passed bloody urine from time to time over a period of about ten years, without making any real effort to find out the cause of his trouble. Urinary bleeding is rather terrifying to the average patient and usually sends him post-haste to his doctor. This man was no exception, and consulted a physician at one of the hospital clinics where he was given internal medication and advised to await developments. As the bleeding reappeared from time to time, this man became rather accustomed to it and as nothing further happened, he let his trouble go on without making any attempt to remedy the condition until at the time I saw him, ten years after its start, the bleeding had become much more profuse and he was suffering considerable pain, due partly to his bladder becoming distended at times with clot and partly to an infection of his bladder; this infection practically always comes to any bladder that is chronically overdistended with urine.

One cannot say, perhaps, that this medical man's advice, that the patient await developments, was so very bad in this individual instance; if it had been, this patient would not have been living ten years later. On the other hand, one cannot surely say that the advice was real good, as this man was found to have, at the time I operated upon him, a bladder that was full of papillomatous tissue that was microscopically papillary carcinoma. There is every reason to suppose that there would have been less likelihood of this condition returning if this patient had been operated upon ten years before, which might have been done had his medical adviser urged him to be carefully investigated.

With this case in mind, I have gone over one hundred cases of hematuria from my records; cases that are as nearly consecutive as possible, in order that they may show a fair average of these cases as they present themselves to us for treatment. I have done this to see, if by chance, I am too concerned about hematuria in general; to determine, if possible, if there is really any considerable proportion of these cases of urinary bleeding that have their origin in some relatively trivial cause such as would justify this man's physician in counselling him to await developments, or to determine, on the other hand, whether my own view is justified by the facts, and that this man's doctor was taking a very great risk when he advised a patient with hematuria of unknown origin, that it would be safe for him to wait and let the condition go practically uninvestigated for an indefinite time.

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* Read before the Worcester Medical Society, Feb. 11, 1920.

The cases that I have studied have, with the exception of a very few, which have been included because of their special interest, been taken in the order in which they have presented themselves, and are, I believe, fairly representative of a series of cases of this sort. I have excluded such cases of hematuria as have followed injury, of which there have been four or five in the three years that these cases cover. The cause and usually the location of the bleeding in these cases are perfectly evident. I have also excluded the cases that one sees accompanying acute inflammations of the bladder: for the most part, they are related to specific urethritis. There are further, a few cases that I have excluded, because for one reason or another, it has not been possible to arrive at a definite conclusion as to their cause; in most instances these patients were seen but once. I have no particular reason to suppose that the including of these undiagnosed cases would have materially changed my figures.

Hematurias are often divided into several types and at times a good deal of diagnostic importance is placed upon these different types; more than I believe the facts justify. The cases of "initial" and "terminal" hematuria, those instances where the bleeding is limited, in the one case to the first, and in the other to the last of urination, usually accompany lesions that are located either in the deep urethra or just at the bladder outlet. Thus certain types of bleeding have some suggestive value as to the probable location of a bleeding lesion. Bleedings of this type most often, though by no means invariably accompany cases of urethritis.

Again, hematurias are often divided into those that are accompanied by pain and those that are not. I think that one may draw some conclusion from this, although nothing that is very definite. A painful hematuria is more often of bladder origin than it is of renal, but, on the other hand, in many of the bleedings that have their origin in the bladder, pain is not present until such time as there has been some infection or the bleeding has been so profuse as to distend the bladder with clots. Hematuria of renal origin, as a rule, gives pain only when the bleeding is sufficient to cause clotting in either the kidney pelvis or the ureter and to excite violent expulsive efforts on the part of the kidney pelvis and ureter. Pain of this type is usually colicky, but at best the pain is only suggestive of the location of the bleeding and tells us nothing regarding the lesion upon which it depends. In most instances the hematuria that these patients have shown has been the so-called total hematuria where the urine has been uniformly bloody.

The type of hematuria that is present is, however, of relatively little help in making an actual diagnosis of the source and particularly of the cause of bleeding in a very large proportion of cases. Whether a given hematuria is initial or terminal, painless or painful, constant or intermittent, one must resort in all but the simplest cases to the use of instruments of precision to determine its source and cause —facts that must be established before one can suggest the proper treatment or probable outcome in a given case. Our greatest help in determining the location and cause of a hematuria is the cystoscope; if the bleeding has its origin in the bladder, the use of this in itself is usually sufficient to determine the nature of the bleeding, though in most of the bleedings that have their origin above the bladder, cystoscopy must be combined with catheterization of the ureters and the use of radiography. In a large proportion of cases, bleeding lesions of the kidney will need to have pyelography carried out in order to determine their cause accurately. This requires a combination of cystoscopy and radiography. No study, no matter how minute, of the character of the bleeding or of the accompanying symptoms can take the place of this investigation.

The hundred cases of hematuria that I have looked up have depended upon the following lesions of the urinary tract:

Bladder infiltrating growths	32
Bladder massive papillomata	11
Bladder small papillomata	7
Hypernephromata	8
Prostate, benign	7
Prostate, malignant	6
Nephritis	7
Renal tuberculosis	5
Hydronephrosis	3
Stone in kidney	4
Stone in ureter	3
Stone in prostate	1
Banti's disease	3
Polycystic kidney	1
Diverticulum bladder	1
Papillary cystitis	1
	100

When one looks over this list, one is impressed with the fact that it contains relatively few conditions in which one can afford to procrastinate if he is to give his patient his best chance. In this list there is not a single case that can be accounted for by oxaluria or a shower of uric acid crystals; conditions that have been called upon, all too often, to account for a hematuria. On the other hand, of these cases of hematuria, just one-half were due to tumors of the bladder, and of these 50 cases of tumor of the bladder 32 were of the infiltrating type of bladder tumor, while eleven more were of the massive type of papilloma, a type of tumor that very often recurs. Only seven of these bladder tumors were of the type that one might consider more or less trivial, that is, of the single small papilloma, but often even tumors of this sort are not to be regarded as entirely benign. I believe, in fact, that every tumor of the bladder should be looked upon as potentially malignant, if indeed, not actually malignant, since a very large proportion of those that do not infiltrate the bladder wall, or lead to metastases, wear the patient out by hemorrhage or lead finally to the destruction of the kidneys through the back pressure and infection that they produce. In this series of hematuria, besides the tumors of the bladder of the distinctly malignant type, there were eight hypernephromas as well as six cases of cancer of the prostate. This makes 64% of the hematurias due to new growth; conditions such that if one is to make an attempt at intelligent treatment he has no time to waste in sitting by and awaiting developments.

Let us take up briefly the question of tumors of the bladder. As I have said, I think that all should be considered potentially malignant if not, indeed, actually so. In the infiltrating growths the outlook for favorable surgical results is, of course, poor. On the other hand, nothing is to be expected from conservative treatment. I have felt, and still feel, that in infiltrating growths of the bladder wall that are favorably situated, an attempt at wide removal should be made, except in such cases as are having a lot of pain in the lower extremities. This radiating pain in the extremities usually indicates that the condition has infiltrated deeply into the tissues of the pelvis and has involved the nerves running to the legs, and that there is practically no hope that one will be able to remove a growth of this sort completely. As a whole, the results of these cases in which one excises infiltrating growths of the bladder are not very satisfactory, but every now and again one sees instances that are very encouraging, and all one saves is clear gain, for without operation all is lost. For example,—within a week or two, I learned of a patient upon whom I operated seven years ago, removing a cancer involving the region of the right ureter which required the excision of a mass fully as large as a silver dollar and the reimplanting of the ureter. This was done with little hope that I would be able to stay the progress of the disease but more from the feeling that the patient should have her chance. The patient remains apparently perfectly well. Considering the fact that these patients are doomed unless one does subject them to operation, I feel that it is right to offer them their chance though we know in the great majority of cases that the result is going to be, at best, simply palliative. The insistence with which one may urge operation upon these patients with infiltrating growths of the bladder naturally depends to a considerable degree upon the location of the growth. Growths that are situated at the upper and back part of the bladder, where, unfortunately, they are rare, are much easier to remove than those situated laterally or especially those situated anteriorly. When it comes to these growths that are so situated as to involve the bladder outlet, and where, in order to get rid of the growth, one must remove the whole bladder and either make urinary fistulae in the loins or transplant the ureters into the bowel, one cannot urge operation very strongly, because of the fearful mutilation that results in the few cases who survive the operation.

I have given up the wide intraperitoneal resections of the bladder that we used to carry out for infiltrating bladder growths I have reached the conclusion that they do not give enough better results as regards freedom from recurrence to justify their greater operative risk. I content myself by removing the growth with a margin of at least a centimeter on all sides. I remove the full thickness of the bladder wall, reimplanting the ureter, if this comes within the area. I have used radium in the treatment of a few infiltrating bladder tumors—this has been used in conjunction with the operative removal of the growth. In one case, especially, we used radium emanations on two occasions, inserting the capsules through the suprapubic opening. Following both these applications there was a very marked local reaction—but this patient, who seemed to me decidedly unfavorable, was seen a month or so ago—more than two years after operation; he then had no subjective symptoms and looked to me in perfect health. I did not, however, have a chance to examine this man's bladder and his condition may be less favorable than I believe it to be. The treatment has so impressed me that I have made arrangements which I expect will, in the near future, allow me to carry out the combined surgical and radium treatment of these tumors, in a sufficient number of cases to be able to draw more accurate conclusions as to its value.

Occasionally the purely palliative procedure of cauterizing deeply a growth that it is impossible to remove is attended with a degree of palliation that is worth while, but in many instances it is like the formation of a permanent suprapubic fistula for the same purpose—of doubtful advantage.

With the massive papilloma in which the base is not infiltrated, the outlook as regards cure is, on the whole, much more favorable than with the infiltrating growths. One does get local recurrences in tumors of this type, and apparently certain tumors of this sort that are allowed to remain, take on malignancy and become infiltrating tumors of the bladder. I dare say that some of the infiltrating bladder growths, in which the history is of occasional bleeding that has extended over a long time, were originally these massive papillomata which finally infiltrated the bladder wall as well as sloughed, thus giving the typical, irregular, ulcerating surface, with its base infiltrating the bladder wall on all sides, that one sees in carcinomata of the bladder. These massive papillomata should be removed as early as possible and with reasonable wideness. In dealing with tumors in general I doubt if it is of any real importance whether one makes his incision with a cautery or with a knife.

The small papillomata where there is a single little frond of tissue are usually removable by use of the high frequency current. As they often grow quite rapidly, it seems to me that this should be done as early as possible. If the high frequency current does not take care of them promptly they should be removed by opening the bladder and excising the tumor with a moderate area of the mucous membrane surrounding it. One tumor, supposedly of this type, that I operated upon a little less than two years ago, had apparently been stimulated to activity by applications of the high frequency current. I had seen this patient and suggested this treatment and then had not seen her for a time. The growth had increased and though I removed it widely, resecting and reimplanting one ureter, it recurred and she died less than a year afterwards. This patient and another one that I saw about the same time, with an inoperable infiltrating tumor, had been operated upon for papillomas, respectively 18 and 14 years before they came under my care.

I feel decidedly that one is not justified in counselling delay in any hematuria that comes under his notice, unless one can be sure that the hematuria he is considering is not from a bladder tumor, since at least three-quarters of these are cases that require immediate treatment in order that they may have any chance of cure.

In my list there are twenty-eight cases in which the hematuria was of renal origin. These were: 8 hypernephromata, 7 bleeding nephritis, 5 renal T. B., 4 stones in kidney, 3 hydronephrosis, 1 polycystic kidney. In these cases of renal hematuria the necessity for operation differs greatly; but, unfortunately, the cases in which the necessity for operations is least urgent often resemble closely the cases in which operation is most urgently indicated. The cases in which operation is least urgent are the various types of bleeding nephritis. In one type of nephritis, which I refer to as hemorrhagic nephritis, we see a chronic kidney of the cardio renal type with high blood pressure, a low gravity urine that is low in solids and ability to throw out dyes, that presents a moderate grade of hematuria. Cases of this type are not common and operation is not only not helpful but it is to be avoided as capable of doing harm. The other type of bleeding nephritis, I think, is usually of inflammatory origin and is known under several names, thus essential hematuria, focal nephritis, and varix of the papilla of the pyramid are, I believe, simply variants of the same process. In one case of this sort that I saw, the kidney was removed and carefully examined. While it presented superficially the appearance of a varix of the papilla, examination of the tissue of the pyramid showed the lesions of a chronic nephritis of the parenchymatous type; the dilated veins seem to be secondary to this.

In this type of nephritis the bleeding is rarely such as to threaten life. Operation is not strongly indicated, though it practically invariably stops the bleeding. It is not because operation is important in these cases that they are operated upon, but because a definite diagnosis, a differentiation between nephritis and hypernephroma, in this type of case, is extremely difficult to make without cutting down on the kidney. In many ways these cases of bleeding nephritis simulate *early* hypernephroma and I know of no sure way to distinguish between these two conditions in the early stage except by cutting down upon the kidney and exploring it. The typical hypernephroma, the advanced one, shows a perfectly characteristic picture, a very considerable mass on palpation as well as marked deformity of the kidney pelvis as seen in the pyelogram. The beginning hypernephromata, however, show very little change, either in size of the kidney or in deformity of the pelvis. The fact that hypernephromata, when removed early, give good results; that when removed late, the results are so unsatisfactory as regards recurrence; the fact that in so many instances the disease is so far advanced at the time it is recognized that it is impossible to remove the kidney; all these make me feel that any bleeding lesion of the kidney demands at first most careful study, and then if there is a question of hypernephroma, a careful exploratory operation, in order to determine that one is not dealing with an early hypernephroma. If it is found at operation that a suspicious renal bleeding is from a focal nephritis, simple decapsulation rarely if ever fails to give relief.

In the case of the other renal lesions that produce hematuria the indications for early operation are less imperative than with the hypernephromata.

In this series of 100 cases of hematuria there have been five instances where bleeding was the result of a renal tuberculosis. In none of these instances was the bleeding profuse enough to modify the usual rule regarding the treatment of that condition which, as I understand it, is in case of unilateral renal tuberculosis to remove the affected kidney as soon as the diagnosis has been definitely made. In some cases of renal tuberculosis, however, hematuria is severe and in two instances that I saw several years ago, instances not included in this list of cases, the hematuria was so profuse as to lead me to do a suprapubic cystotomy. There was so much bleeding in these cases that it was impossible to use a cystoscope and it was believed that a hemorrhage of so marked a nature could have its origin only in some bladder tumor. The opening of the bladder did allow me to rule out the bladder as the source of hemorrhage and helped in determining which was the diseased kidney; however, it is certainly not a justifiable procedure on that score and I do not believe that I should have to resort to this maneuver today, under similar circumstances; but of that I cannot be sure.

Among the cases of stone in the urinary tract that have caused hematuria, there have been four cases of stone in the kidney. These were recognized by radiography and removed. It seems to me that any kidney that contains a stone is threatened with ultimate destruction unless that stone is removed. This destruction may take place in either one of two ways: in one, the slower way, the destruction of tissue follows pressure by the stone as it increases in size; this is naturally slow; the other and the more common way for destruction to take place is to have added to a moderate increase in size of the stone an infection which destroys the kidney very rapidly, and this latter probability is the real cause, in my mind, for advising the removal of practically any stone that we find in a kidney, unless in that particular individual there exists some special contraindication to operation.

As regards stone in the ureter there have been only three that have presented any considerable grade of hematuria. The mere fact that a ureter stone causes bleeding is not a reason why it should be treated any differently from ureter stones in general. My feeling is that a ureter stone, which is not accompanied by urinary infection or temperature, and which is progressing steadily toward the bladder, is a perfectly proper one to treat expectantly; that, on the other hand, when a ureter stone causes repeated attacks of severe pain; when there is evidence of kidney infection or even considerable increase in size of a kidney, whose ureter contains a stone, or when a ureter stone remains in one position for a long time and becomes incarcerated, so to speak, it should be removed. The incarcerated ureter stone, even if quiescent, is, in my opinion, a menace to its kidney since it often causes inflammatory conditions or conditions that at least render the kidney especially susceptible to infection and which in time will lead to its destruction. If a stone is allowed to remain incarcerated in a ureter for a considerable time it produces a formation of fibrous tissue in and about the ureter that may cause stricture of the ureter with its baleful effect on its kidney, even after the stone has been removed. Its removal should take place before these changes are brought about.

A hydronephrosis, even one that is not very large, may lead to bleeding, as happened in three cases in this series. The type of hydronephrosis that has its origin in an obstruction due to a supernumerary vessel, and which we are able to recognize more and more frequently by means of pyelography, seems to be a type that is quite prone to cause hematuria. These hematurias have for the most part been absolutely without symptoms other than the bleeding, and have required no further treatment than cutting the extra vessel. It would help us greatly in conserving kidneys if more hydronephroses, which are usually so devoid of symptoms in their early stages were indicated early in their course by a sharp hematuria. I look upon hematuria in hydronephrosis as a beneficent symptom that may bring the patient into our hands in such season that a conservative operation may be done.

In one instance in this list I operated upon a polycystic kidney which was bleeding in a way which seemed to me to threaten life. This condition was not recognized until the kidney had been exposed. As the mass was a very large one, I went in by the abdominal route, and was able by palpating the better kidney to determine that while it, too, contained a few cysts, the cystic disease on that side had not progressed very far. This illustrated the fact that has been without exception in my personal experience, that congenital cystic disease of the kidney is always bilateral, though as in this instance, the disease in one kidney may be much more marked than in the other. It seemed to me that in this case the patient's interests would be best served by the removal of the bleeding cystic kidney and this was accordingly done. This is one of the few cases that is not consecutive, but I included it because of its rarity and interest. This operation was done four or five years ago and the patient, who was seen last summer, has remained relatively well since.

Stone in the prostate is a comparatively rare lesion and if it is not causing pain or obstruction to urination, its removal is not urgently indicated. The condition is too rarely seen to warrant us in considering it at this time.

The malignant prostate, to which our attention is first called by a hematuria, in a small proportion of cases, is a condition on which I feel one should operate only if a certain amount of obstruction to urination is present. The removal of the malignant prostate with the idea that one is going to prevent the progression of the malignant disease seems to me very questionable, although once in a while one does see a case in which the removal of a prostate that was malignant clinically and microscopically has been followed by a long period of freedom from symptoms, so much so, as to make one believe that a cure of the condition, clinically speaking, had been effected. These instances, however, are extremely rare and for the most part operation on malignant prostates should, I believe, be restricted to those cases that are having a good deal of trouble with their residual, and it should be carried out as a palliative measure rather than with any expectation of curing the condition. The operation should, I believe, be carried out by the lower route, as in a good number of these cases the tumor is too dense to make enucleation from above possible.

In this series of cases I have found only seven cases where obstructing prostates of benign type have caused marked hematuria. I believe, however, that the proportion is larger than this, and that I have, in going over my records, overlooked some of my cases of benign obstructing prostates that have presented hematuria as a marked symptom. Although my figures do not show it, I am strongly of the opinion that hematuria occurs considerably more frequently in the big, overgrown, benign prostate than in the malignant prostate. This, however, is not shown by my figures and may simply be an erroneous impression on my part. The presence of hematuria in a patient presenting an obstructing prostate does not materially modify the course which we should pursue regarding the prostate. In two instances where a man with a big prostate has bled profusely I have found a small papilloma as well as an obstructing prostate. In the first of these cases it was not recognized at the time of operation but was recognized later and removed.

There have been two cases of Banti's disease in which the diagnosis has been backed up by two competent medical consultants. These two cases occurred several years ago and were rather dragged into this series as they show an unusual cause for hematuria. There has likewise been a third case in which the probable diagnosis of Banti's disease depends solely upon my unconfirmed opinion. All these cases, as one might expect, progressed moderately rapidly to a fatal termination. They all presented a grade of hematuria which varied from slight to moderate, accompanied by a large spleen, diarrhea, long continued temperature, and changes in the blood which consisted in a diminution in the red cells (in one case to 2,700,000) with a lowered hemoglobin; there were no changes in the character of the blood cells.

The remaining cases in this list were not of great general interest and I will not describe them.

I believe that this series of cases of hematuria, which probably represents pretty much the ordinary run of such cases, proves very definitely that hematuria is not a condition to be looked upon lightly, that in more than one-half of the cases it is indicative of an extremely serious condition which is only remediable if recognized and treated early; that in only a small proportion of cases, more especially in the cases of bleeding nephritis, can it be said that it makes no real difference whether they are attacked early or not, that in these very cases, however, it is essential that they be investigated for the simple reason that in most instances without this investigation it is utterly impossible to distinguish them from cases of hypernephroma where an early diagnosis and early removal of the growth are essential if one is to accomplish anything in this class of tumors of the kidney.

My opinion is that a study of a considerable number of cases of hematuria compels us to conclude that the physician who told his patient that he might safely ignore his bleeding showed poor judgment medically; that although he was partially right, this was due to good luck rather than to sound medical judgment.

CHRONIC FATIGUE: DIET, EXERCISE, AND OTHER FACTORS IN TREATMENT.*

By John Bryant, M.D., Boston.

Introduction.

The paper which follows was read under the title, "Therapeutic Procedures for the Relief of Decreased Inhibition." Use of the term "Inhibition" introduced a physiological factor for discussion, and tended to obscure the simple clinical chain of events which it was desired to present. The physiological aspect of the paper has therefore been eliminated.

Argument.

In many invalids, especially of the chronic intestinal type, there seems to be a lowered threshold for the sensory stimuli of all sorts which result in motor action, both mental and physical. Apparently the resistance normally interposed by the higher centers like a rheostat in the reflex arc, is absent or short-circuited, with the result that energy is uselessly dissipated in all directions. In a word, the control mechanism is out of order.

As a result, the patient always reacts excessively to every form of mental or physical sensation.

If a patient uselessly dissipates energy from morning until night, unless his supply of energy is greatly above normal, he will become fatigued.

Acute fatigue may become chronic. A state of chronic fatigue is commonly present in the chronic invalid. No return of the invalid to health is possible without relief from this chronic fatigue. Therefore, the resistance of the patient to incoming mental and physical stimuli must be raised as nearly as possible to normal. Rational treatment for excessive reaction to sensory stimuli, logically follows upon an understanding of the etiology of this over-reaction.

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* Read, in part, at a meeting of the Boston Society of Psychiatry and Neurology, Nov. 21, 1919.

Etiologic Factors Productive of Over-Reaction to Sensory Stimuli.

Among the factors tending to produce a condition of over-reaction to sensory stimuli may be mentioned the following:

1. In the child.
   - *a*. Poor (nervous) heredity.
   - *b*. Lack of mental discipline in youth.
     - (1) Poorly trained parents.
     - (2) Illness in youth. (Parents otherwise capable are often afraid to discipline a sickly child.)
   - *c*. Nervous exhaustion in youth.
     - (1) Illness, acute.
     - (2) Illness, chronic.
     - (3) Organic lesions.
     - (4) Mental strains.
     - (5) Over-exertion physically.
2. In the adult.
   - *a*. Excessive mental or physical strains in a previously normal adult.
   - *b*. Mental or physical strains not in themselves excessive, acting upon a subnormal adult, on the physiological principle of the repetition of minimal stimuli.
   - *c*. Results of lack of mental training in youth.

Treatment of Over-Reaction to Sensory Stimuli.

Lack of mental training in youth, necessitates training of the adult in mental poise which should have been unconsciously acquired in early youth. This mental training is more difficult in proportion to the increasing resistance shown by the adult to the formation of new habits. On the other hand, this mental training is proportionately easier because of the adult brain which can be brought to bear upon the problem, and in consequence of the intensity of the desire for health which the average patient of this type displays.

The central problem is the increase of conscious mental control. This is accomplished on the one hand by reducing to a minimum the possibility for harm of all stimulants or irritants either external or internal. On the other hand, it is necessary to increase by practice the power of resistance of the patient to the incoming sensory stimuli. By this means, the so-called threshold for stimuli may be raised toward normal. It is essential to realize that the normal control mechanism is seldom absent although it is frequently rusty from disuse.

Among the potential internal stimulants or irritants may be mentioned mental conflicts, physical exertion, drugs, and diet.

Among the potential external stimulants or irritants may be mentioned people, things, places, weather, rapid motion of all sorts, and other such factors as are commonly grouped together under the name of environment.

In general, therapy takes two forms. Undesirable things from within or from without may be eliminated as far as possible. This is, so to speak, a passive mode of assistance. Many such procedures will readily suggest themselves. Rest, applied in repeated small doses, is obviously a valuable preventive remedy, but it is also largely a passive mode of assistance.

Two active methods of assistance deserve special consideration. (a) The first procedure is the utilization of a physically bland and chemically non-irritating diet for the promotion of internal rest. (b) The second procedure is the employment of a special form of slow exercise, by the use of which much may be accomplished in the education or reëducation of the control mechanism.

a. Diet.

The foremost essential in the regulation of diet for the over-reacting patient, is the temporarily complete elimination of meat and fish, and the thorough cooking and careful serving of all foods allowed.

The restriction of milk to the few ounces daily necessary to make food palatable, is desirable. Eggs should be allowed only when combined with starches, as in cake or puddings.

The two best substitutes for meat and fish are gelatine desserts and cream cheese. There is, however, no necessity for worrying about a shortage of proteins. The chemists tell us that vegetable proteins are as easily available to the organism as the animal proteins, and with the liberal use of the heavier vegetables, there is no danger of a shortage of proteins.

The accessory of food factors are cared for by the use of raw fruits, uncooked vegetables in the form of salads, and butter of good quality.

This strict diet is maintained for from two weeks to a month. At the close of this period, there is a gradual resumption of general diet, but on an intermittent basis. At first, an unrestricted diet may be allowed for one meal or for one day in the week. The second week there may be two days of unrestricted diet, and in the third progressive week the patient may arrive at unrestricted diet every second day. It is unlikely, however, that the over-reactive patient can ever profitably take unrestricted diet on continuous days for any great length of time without suffering harm from excessive chemical stimulation, since in these patients there very frequently exists an intestinal abnormality such as ileal regurgitation which complicates the normal method of disposition of the end-products of digestion.

b. Exercise.

A very direct method of raising the action of the control mechanism toward normal, is the employment of a special type of physical exercise which has for its immediate object the sharpening of muscle sense perception in especial relation to balance and physical poise. Exercise utilized for this purpose is carried out at the very slow rate of about ten seconds per linear foot of distance. One simple exercise for each main muscle group has been developed, and in the Army a routine was employed on my Convalescent Service at the Walter Reed General Hospital, which took for its full completion about one hour of time. The same routine has been utilized for private patients, with very considerable success. Parallel with the increasing power of physical control, comes a noticeable increase in mental poise.

Patients become able to pass without excessive mental distress through small crises in their lives which would have previously left them prostrate. This gain in mental poise is certainly greatly appreciated by the patients. A secondary result, of which patients almost always speak, is the evaporation of mild phobias. These phobias seem to have been for the most part based upon fear. The fear is possibly due in part to inability to handle properly the locomotor mechanism, involving a partial loss of the sense of balance with the consequent uncertainty of action and added mental strains which must result.

The two most usual phobias observed have been the fear of high places and the fear of crossing streets in city traffic. In addition, there are, of course, such small phobias as the fear of meeting people, and the fear that the ordinary daily routine cannot be completed without excessive exhaustion. These also tend to disappear.

Summary.

1. The world is full of persons, mostly chronic invalids, who react excessively to sensory stimuli of both mental and physical origin.

2. One obvious ultimate result of this continued over-reaction to sensory stimuli is chronic fatigue. The patient will not recover until the chronic fatigue is relieved.

3. In order to relieve the chronic fatigue, its cause must be attacked.

4. In Diet and Exercise, we have available two valuable but apparently too little appreciated active therapeutic procedures for an attack upon the problem of over-reaction to sensory stimuli. Some details of the use of these two procedures have been presented.

Conclusions.

1. The chronic invalid often suffers from chronic fatigue,

2. Recovery of the patient who suffers from chronic fatigue depends in large measure upon the possibility of decreasing or eliminating over-reaction to sensory stimuli.

3. Diet and Exercise, properly used, are valuable factors in

a. Decreasing over-reaction to sensory stimuli.

b. Eliminating chronic fatigue.

c. Promoting a return to health of the chronic invalid.

A CASE OF INFECTION OF THE KNEE-JOINT TREATED BY EARLY AND CONTINUOUS ACTIVE MOTION.

By F. B. Lund, M.D., F.A.C.S., Boston.

[From the First Surgical Service, Boston City Hospital.]

Infection of the knee-joint has, in the hands of the majority of surgeons, caused much trouble and anxiety At best immobilization has had to be continued for a long time and, combined with infection, inflammatory swelling, and formation of scar tissue, has frequently resulted in permanent adhesions and a stiff knee. In severe cases the transverse incision across the patella tendon in front of the knee-joint has sometimes been required. So many cases of infected wounds of the knee-joint resulted from the war that the military surgeons had an experience which led to great improvement in the treatment of knee-joint wounds. Immediate suture without drainage after thorough cleansing and excision of the wound, so-called debridement, led to great improvement in results. After infection took place and the surgeons had actual suppuration in the joint to deal with the results were not so good.

McWilliams and Hetzel gave, in the *Annals of Surgery*, September, 1919, a very interesting resumé stating that in seventy-three cases of war wounds of the knee-joint sixteen became infected. In thirteen of these sixten cases, in the final showing, three had had amputations, one resection, four resulted in ankylosis and four died. These were all treated by modified old plan, *i.e.*, with somewhat earlier motions. These authors believe that the Willems treatment would have produced a very much better result than this. Willems in one hundred cases, eighteen of which were accompanied by purulent synovitis of a virulent type, chiefly streptococcus, had no deaths and no amputations. There was one resection and two stiff joints. To the McWilliams paper the reader is referred for the details of treatment.

To the courage of Dr. C. Willems, of Ghent, Belgium, Director of the Hoogstade Military Hospital, we owe our present knowledge that it is possible in certain cases in healthy young adults such as soldiers, to treat infections of the knee and other joints, after incision for drainage, by immediate active motion. By this method excellent results may be obtained in very much less time than by the older procedures. Motion of the joint results in actual expression of the pus every day and adhesions are not allowed to form. I wish to present a case with photographs showing the results attained in an infection of the knee-joint following a bullet wound, by immediate and concontinued active motion, after incision for drainage.

On December 7, P.M., an adult, 43 years old, received a bullet wound in the occiput, and the right popliteal space. X-ray showed a flattened bullet in the back part of the knee-joint, apparently located in the capsular ligament. The wounds were shaved and cleaned and dressed at the relief station to which he was admitted, and a day later he was taken to the City Hospital, where he remained four days. His temperature rose to 100. There was some reddening of the skin and evidence of fluid in the knee-joint. On the twelfth of December an incision an inch and a half long was made on either side of the patella and a large amount of seropurulent fluid escaped. A three-inch incision was made in the mid line of the popliteal space and the dissection carried down to the inner side of the popliteal vessels and after considerable difficulty the bullet was found in the capsular ligament projecting into the knee-joint. A rubber tissue drain was placed in the popliteal space and a dry sterile dressing applied. Active motion was started the next day. The patient coöperated very well in this and was quite proud of the amount of motion in his damaged leg. This was regularly continued daily, the temperature gradually going up, until January 3, when the collection of pus in the upper part of the popliteal incision was drained by the insertion of forceps, and a rubber tube put in. On January 9, a pus pocket above the upper end of the wound in the popliteal space was opened. At this time the active motion was not as free as it had been on account of the swelling and tenderness in the

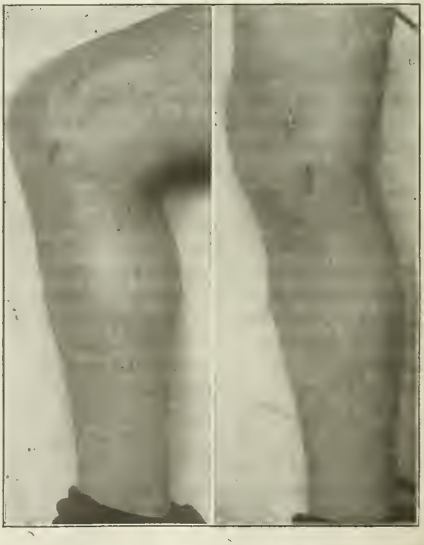

Fig. 1. Fig. 2.

popliteal space. He was then put under Carrel-Dakin treatment under which the amount of pus gradually diminished. The active motion was continued though not quite to the same extent as at first. Through the month of March the active motion was still kept up and on April first he was up on crutches with 45° of flexion and perfect extension. The photographs (Figures 1 and 2) show the amount of flexion and extension on the date of discharge from the hospital. He was then walking freely and actively without the slightest limp. There can be no question in this particular case that active motion from the first gave an excellent result, although recovery was delayed by the complication of the abscess in the popliteal space. The man was a strong, active fellow and coöperated very well. In feeble or nervous patients it would be difficult to accomplish as much. While it may not be possible in all cases of infected knee-joint to bring about this happy consummation, there is no question that early mobilization and active motion will in many cases greatly shorten treatment and improve the final result. To one who has known the time consuming and exhausting difficulties and dangers, as well as the permanent stiffness of the knee which have usually followed suppuration, the recovery of this patient seems really remarkable. Something has certainly come out of the war in regard to our treatment of suppurating joints.

Book Reviews.

Surgical Aspects of Typhoid and Paratyphoid Fevers. By A. E. Webb-Johnson, D.S.C. London: Henry Frowde, Oxford University Press; Hodder & Stoughton, Warwick Sq., E. C. 1919.

In this little book of less than 200 pages, the author has covered a large series of cases observed under most opportune circumstances. As an amplification of the Hunterian Lecture for 1917 the book is of especial interest historically in tracing the early records of typhoid fever made by investigators since the disease was first evidenced in 1643 during the Civil War in England. During the present war the knowledge of typhoid and paratyphoid fevers has been greatly increased. It has been suggested by Prof. Webb-Johnson that the spleen is an important feature to be considered in the "carrier" problem, and many other interesting ideas, formulated as a result of modern practice, are clearly explained to the reader. The subject-matter with reference to these groups of infections is arranged under the following headings: Historical Sketch and Introduction; General Review of Surgical Complications; The Alimentary Tract; The Spleen; The Liver, Biliary Passages, and Pancreas; The Cardio-Vascular System; The Urinary System; The Genital Organs; Parotitis; The Respiratory System; Joint Complications; The Muscular System; Bone Complications; Miscellaneous Abscesses; Eye and Ear Complications; Surgical Aspects of the Carrier Problem. For the surgeon who may be called upon to deal with any one of these diseases, the last chapter is one which will attract considerable attention. The book is well written, splendidly illustrated, and is a valuable addition to the present knowledge of the subject of typhoid and paratyphoid fevers.

The Practical Medical Series. Vol. IV. By Bernard Fantus, M.F., and William A. Evans, M.D. Chicago: The Year Book Publishers. Series 1918.

This book is one of a series of eight volumes published at monthly intervals during 1918, covering an entire field of medicine and surgery. This arrangement of publication makes it possible for the physician to secure the entire series or any one particular review, should he desire only consideration of a certain branch of medicine or surgery. Volume IV. of this series of books deals with pharmacology and therapeutics and with preventive medicine. Under each of these headings much that is of value to the general practitioner and to the specialist as well, is summarized in a clear and concise manner. Both authors have handled a vast amount of material and presented in an intelligent way only what was deemed to be of primary importance. The technique of the administration of a particular prescription is emphasized especially in the section on Pharmacology and Therapeutics. A chapter on War-Time Prescribing is very pertinent and the subjects of Electrotherapy, Restorative Therapy, Functional Therapy, Toxicology and Non-Pharmacal Therapeutics are each clearly treated. Under Preventive Medicine, chapters on Medical Sociology, Sanitation, Food, Personal Hygiene, Hygiene of School Children, Contagious Diseases, and Industrial Hygiene receive an appropriate share of attention. A great many references from foreign journals, as well as from our American journals, are quoted in both sections of the book.

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LICENSED ATTENDANTS.

THERE was introduced in the Legislature this year on the petition of Mrs. Anna L Coolidge, herself a trained nurse, a bill (House 820) to provide for the licensing of attendants by the Board of Registration of Nurses. It was referred to the Committee on Public Health and was unanimously reported in a redrafted form, as House 1603, on April 14. It came before the house committee on Ways and Means, which, after a hearing at which several proponents and no opponents of the measure appeared, reported that the bill should be referred to the next General Court. The House so voted, thus killing the bill for this year.

The bill provides that applicants of eighteen years of age, of good moral character, and holding "a certificate showing graduation from a course of at least nine months' training, including six months practical experience given by a school for the training of attendants or a hospital or sanatorium, approved by the board, shall, upon payment of a fee of two dollars, be examined by the board and, if found to be qualified, shall be registered, with a right to use the title "licensed attendant."

Another section provides that until January 1, 1923, an applicant "who has had three years' experience in the care of the sick, and whose qualifications to be registered as a licensed attendant are certified to by three physicians" shall be similarly registered. This provision is intended to safeguard the interest of those who have already undertaken the care of the sick. Another provision states explicitly that "the act shall not apply to the gratuitous nursing of the sick by friends or relatives, nor to the acts of any person nursing the sick for hire who does not assume to be a licensed attendant or a registered nurse." The other provisions deal purely with matters of administrative detail.

This simple bill is an attempt to provide properly qualified attendants for those sick who do not need or cannot afford the services of the highly trained "registered nurse."

The tremendous expansion in the field of opportunity open to the registered nurse has made, in spite of the number of our training schools, a great scarcity of nurses available for ordinary private work. The opportunities opened to women in many lines during the last few years have lessened the number of applicants for our training schools. The long course of training compels the need of high fees after graduation. All of these factors have combined to make the supply of nurses far below the demand. The needs of the public are not met. The demand for women competent to care for the sick in ordinary conditions is pressing; in an epidemic it would be overwhelming. The need of the hospitals of securing the services of capable women to do much of the routine work now done by pupil nurses is also becoming pressing. The training of attendants in our hospitals would do much to meet both of these needs. Ought we not as physicians to interest ourselves actively in this measure of relief? There is a fear that certain training schools for nurses, which for one reason or another find it hard to secure desirable applicants, may find it harder still to secure applicants if schools for attendants are established. Perhaps the fear is justified. If so, changes in those training schools are called for. Such a fear cannot be allowed to stand in the way of a measure which promises great benefit in so many directions and which promises relief to those of moderate means who are unfortunate enough to be sick.

THE IMPORTANCE OF ANTI-RABIC PROPHYLACTIC TREATMENT.

In January and February the number of cases of rabies in animals,—dogs, cats, sows and pigs,—increased in the Southern and Eastern Health Districts of Massachusetts to such a marked degree that it became necessary to order dogs in many communities to be restrained and not allowed to roam at large. The fact to remember in cases of rabies is that once a person develops symptoms of rabies, there is no hope. Every human case dies. For this reason the anti-rabic prophylactic treatment is the only hope to escape the disease when bitten or "licked" by a rabid animal.

It is necessary, in order to stamp out rabies, that all animals, dogs in particular, which show symptoms of rabies or are suspected of being "mad," or which have been bitten by "strange" dogs, be restricted by confining them for at least four weeks to watch for symptoms. "Strange" dogs not known in a community should be caught and disposed of unless bearing the owner's name.

In case a dog is suspected after biting a person, it should not be killed at once, but should be watched for a few days for the appearance of symptoms of rabies. After they appear, it should be killed without injury to the head and the head sent to the State Laboratory for examination of the brain. If the Laboratory reports that it is "suspicious" or "positive" for Negri bodies, the anti-rabic treatment should be instituted without delay. This treatment may be obtained free from the Massachusetts Department of Public Health through the State District Health Officers or by direct application to the Department. The product is furnished the Department by the U. S. Public Health Service.

The danger from a single rabid dog may be seen when one remembers that in Taunton, in February, one dog ran through the streets and bit twelve persons.

Persons Bitten by "Positive" Dogs in Massachusetts.

Year	Persons Bitten	No. Taking Anti-Rabic Treatment
1916	24	24
1917	26	26
1918	35	17
1919	45	42
1920	27*	26

* January to March 31.

It is an odd fact that there are more cases of animal rabies during the cold months than during the warm months. The communities will be fortunate indeed, however, if the cases of rabid dogs have not increased with the advent of spring and melting snows, for at that time dogs begin to wander farther afield.

CANDIDACY OF DR. HOMER GAGE.

The attention of physicians who are also Harvard graduates is called to the candidacy of Dr. Homer Gage of Worcester for the board of overseers of Harvard College on Commencement Day, June 24. The medical profession could have no better representative, and his breadth of view and various interests would make him a valuable member of the board, to which we sincerely hope that he may be elected.

Annual Meeting of the A. M. A.—The next annual meeting of the American Medical Association will be held in Boston June 6 to 10, 1921. Dr. Fred B. Lund of Boston has been made chairman of the committee of arrangements.

MEDICAL NOTES.

Coöperation of Ripe Olive Packers in the Prevention of Fatalities from Botulinus Poisoning.—The Bureau of Chemistry of the Department of Agriculture authorizes the statement that it has met with a gratifying degree of coöperation on the part of packers of ripe olives in improving methods to such an extent that danger from botulinus poisoning in future packs will be eliminated. Five groups of deaths traced to poison produced by the organism known as *Bacillus botulinus* have occurred in New York City, Detroit, Michigan, Canton, Ohio; Memphis, Tennessee, and Kalispell, Montana. All of these cases were due to the consumption of ripe olives. No fatalities have been traced to green olives.

Very extensive investigations have been made by scientists from the Bureau of Chemistry with the coöperation of the packers and the packers have also employed specialists to study the causes of botulinus poisoning and the precautions which should be employed to prevent further difficulty. The experts agree that the trouble is not inherent in the type of container used. Whether the olives be packed in glass jars or in tin cans they can be rendered absolutely safe if proper precautions are taken to prevent the infection with bacteria during handling and if the packages when filled are sterilized at a sufficient temperature and for a sufficient period of time. It is entirely practicable to sterilize both glass containers and tin cans at a temperature high enough to insure absolute sterilization.

Unfortunately some packs of ripe olives put up in glass, as well as some in tin, during past seasons were not prepared with all the precautions now known to be essential and were not sterilized at a sufficiently high temperature, and some in glass were responsible for the fatalities. It is probable that of all the ripe olives on the market but an extremely small number contained *Bacillus botulinus*. Of more than 2,000 individual packages collected and examined in the Bureau of Chemistry but eight were found to contain *Bacillus botulinus*, and seven of these were from the output of one manufacturer and from one batch of his output. In addition to these eight, the Bureau has examined samples of some of the olives responsible for the fatalities and he has also found *Bacillus botulinus* in these specimens.

Since there is a possibility of danger from any ripe olive which has been insufficiently sterilized the Bureau of Chemistry has suggested to the industry that all ripe olives in glass or in tin wherever located be carefully inspected and that any which show the slightest degree of decomposition be destroyed. It has further suggested that all ripe olives which have not been processed at a sufficiently high temperature be returned to the packers for immediate reprocessing at a sufficient temperature to insure complete sterilization. With few exceptions, the olive packers have followed all suggestions made in the interest of the public safety, and by mutual agreement entered into by practically all of the packers, they are now taking steps to withdraw from the market all ripe olives in glass containers which have not been sterilized at a sufficient temperature. Similar steps are being taken by some of the packers in the case of minced olive relishes, in view of the fact that one death due to the consumption of such a product has been reported. While concerted action to remove ripe olives packed in tin and processed at a low temperature has not been taken by the packers, the fact that spoilage in tin has so consistently resulted in making a "swell" out of the can constitutes a warning to the purchaser which is not often disregarded. There is no reason to anticipate danger from properly packed and processed ripe olives whether they be packed in tin or glass containers.

NEW JERSEY STATE HOSPITAL.—The forty-third and forty-fourth reports of the New Jersey State Hospital at Morris Plains, have just been received. The first covers the period from November 1, 1917, to June 30, 1918. During this time 3,140 patients were under treatment at the hospital, an increase of 38 over the preceding year; 455 new patients were admitted. There was a mortality rate of 4.77 per cent. of the total number. Of the patients admitted, 280, 143 men and 137 women, or 61.54 per cent., were suffering from their first attack of mental disease. Over 60 per cent. of those admitted were diagnosed as suffering from psychoses from which there is improbability of recovery; these include 146 cases of dementia praecox; 55 of dementia senile; 34 of dementia paretic; 11 of dementia organic; 18 of arrested physical development. Of the patients who recovered over 77 per cent. were admitted within six months of the onset of their psychoses; 88.63 per cent. were under treatment less than a year before discharged as recovered. This lends emphasis to the fact that early scientific treatment is as much a necessity for the alleviation of mental diseases as those considered physical in character. Various forms of diversional occupation have been employed to aid in the recovery of patients. Motion pictures, a circulating library, and newspapers have contributed to the happiness of the patients. Twelve nurses were graduated from the Training School in 1918, and seven in 1919.

During the year ending June 30, 1919, 3,336 patients were cared for at the New Jersey State Hospital; 613 new patients were admitted, the highest number of admissions during any one year in the history of the institution. Nearly 63 per cent. of the patients admitted were alleged to be suffering from their first mental attack.

Of the occupations followed by those admitted, the largest single classification for the men was that of laborers, broadly stated, the number being 87. Among the women the largest number were housewives 161 (nearly 50 per cent.), housework 34, domestics 17, and housekeepers 11. Thus the women engaged in household duties constituted nearly 70 per cent.

Regarding the mental diagnosis of the patients admitted, 29.5 per cent. were diagnosed as dementia praecox, over 6 per cent. general paralysis and nearly 39 per cent. were diagnosed as manic depressive psychoses. Over 10 per cent. were diagnosed as suffering from mental conditions due to senility.

Of the 613 admitted, 340 were chargeable to the State and counties jointly, 128 to the State exclusively and 145 were supported either by relatives or from their own estate.

Of the alleged causes assigned for the psychoses the most general ones were excesses, 33; syphilis, 19; heredity, 20; worry, 22; senility, 22; childbirth, 10; climacteric, 14; and influenza, 17.

The physical conditions most often associated with mental disease were involved in the following cases: Syphilis, 44; arteriosclerosis, 59; nephritis, 18; and endocarditis, 27.

During the year there were 316 deaths, a percentage of 9.4 based on the total number under treatment; this is an abnormal percentage and is due in large measure to the influenza epidemic.

A large number of the patients are employed about the wards each day; smaller groups go to the laundry, the shops, kitchen and bakery. All the men who can be permitted the greater freedom are kept busy about the farm, gardens, greenhouses and grounds. Many of the women enjoy sewing, either on the wards or in the sewing room, and in this way much useful mending is accomplished, as well as the construction of new garments.

The Industrial Division proper consists of the Arts and Crafts Department for Men, the Arts and Crafts Department for Women, the Printing Department and the Bookbinding Department, and is under the general direction of one of the assistant physicians.

In the Print Shop is done all the printing for the institution—forms, blanks, cards for indexing purposes, notices, signs, dietaries, ledgers and all the varied work required in a large hospital community. Included in the work of the Print Shop is the editing and publishing of a monthly paper, *The Psychogram.* Practically all the writing called for by this magazine—stories, news items, essays—is done by the patients.

National Association for the Study of Epilepsy.—The nineteenth annual meeting of the National Association for the Study of Epilepsy was held on June 3, 1920, at the New York Academy of Medicine. At the morning session a presidential address was delivered by Dr. L. Pierce Clark of New York, and other speakers included Dr. William T. Shanahan, Superintendent of the Craig Colony; Dr. David F. Weeks, New Jersey, and T. E. Uniker, New York. A clinic was conducted by Dr. Arthur L. Shaw of Camden, New York. At the afternoon session a business meeting was held, and addresses were made in the afternoon and evening by the following physicians: Dr. Walter H. Kidder, New York; Dr. Smith E. Jelliffe, New York; Dr. J. Ramsay Hunt, New York; Dr. Chester A. Marsh, Indiana; Dr. Alfred S. Taylor, New York; Dr. Alfred Sachs, New York; Dr. Morgan B. Hodskins, Massachusetts; Dr. Harvey M. Watkins, Massachusetts; Dr. Foster Kennedy, New York; Major Frank B. Gilbreth of New Jersey.

Bubonic Plague at Vera Cruz.—A report received on June 1 from Vera Cruz states that an outbreak of bubonic plague has occurred in that city, eleven cases and five resulting deaths having been reported up to that time. The first case is believed to have developed on May 15. The focal point of the outbreak seems to be the warehouses of one of the docking companies. It is considered certain that rats transmitted the plague as a number of dead rodents have been found recently near these warehouses. Vera Cruz is completely cut off from the rest of the republic. Relief has begun to arrive from outside sources, however; a train arrived from Mexico City on May 31 with representatives of the sanitary corps and material with which to fight the plague, and President Wilson has offered to send hospital ships, nurses, doctors, and medical supplies immediately to Vera Cruz.

No third-class passengers are to be permitted to depart for America from any European country, especially Russia and other Eastern States, without medical examination. Disinfecting machines will be erected at such ports as Trieste and no emigrant will be allowed to embark without a certificate signed by an American medical inspector that he is free from disease. The British Government is also awake to the danger and is coöperating with General Blue in ensuring complete control of emigration. American officers reporting to General Blue have described the ravages of typhus and cholera, saying that in some villages sixty per cent. of the population have contracted disease. General Blue is expected to continue his trip to Trieste within a few days.

TRUDEAU SANATORIUM.—From the reports of the president and chairman of the executive committee it is evident that Trudeau Sanatorium, Saranac Lake, New York, is outgrowing its present accommodations and new buildings are needed for its various departments.

More than five thousand patients have been treated during its thirty-five years of existence and over half of them are living and well. By example and precept these patients have taught an ever-increasing circle of people that tuberculosis is curable and preventable.

Physicians, generally, have shown a deep interest in the institution and many have availed themselves of the opportunity to attend the public lectures. This is due, no doubt, to the increase of respiratory diseases during and following the war and influenza epidemic.

It is to be regretted that the limited capacity has made it necessary to postpone admission of patients to the Sanatorium in some cases, and to refuse several physicians enrollment in the school.

Several substantial gifts have already been received, and it is to be hoped that it will be possible, in the near future, to take care of all seeking admission.

BIRTH STATISTICS FOR 1918.—In the birth registration area of the United States, 1,363,649 infants were born alive in 1918, representing a birth rate of 24.4 per 1,000 population. Of this total number of infants born alive 1,288,711 were white and 74,938 were colored. The total number of deaths in the same area was 1,014,620, or 18.2 per 1,000. The births exceeded the deaths by 34.4 per cent. For every state in the registration area, for most of the cities, and for nearly all the counties, the births exceeded the deaths in many cases by considerable proportions. The mortality rate for infants under one year of age averaged 101 per 1,000 live births. The foregoing are among the facts brought out by the annual compilation of birth statistics by the Bureau of the Census.

The birth registration area, established in 1915, has grown rapidly. It comprised in 1918, as in 1917, the six New England States, Indiana, Kansas, Kentucky, Maryland, Michigan, Minnesota, New York, North Carolina, Ohio, Pennsylvania, Utah, Virginia, Washington, Wisconsin, and the District of Columbia, and had an estimated population of 55,213,339, or about 53 per cent. of the estimated total population of the United States in that year.

The birth rate for the entire birth-registration area fell below that of 1917 by two-tenths of one per 1,000 population; but the death rate was greater by 4.1 per 1,000 than in 1917. Thus the excess of the birth rate over the death rate for 1918, which amounted to 6.2 per 1,000, was somewhat less than the corresponding excess for 1917, 10.5.

The infant mortality rate—that is, the number of infants under one year of age per 1,000 born alive—throughout the birth-registration area as a whole was 101 in 1918 as against 94 in 1917. This is equivalent to saying that in 1917 of every 11 infants born alive, one died before reaching the age of one year, whereas the ratio in 1918 was about one in ten. Among the 20 states these rates ranged from 64 for Utah to 140 for Maryland, and for the white population separately the lowest and the highest rates were 63 for Utah and 126 for Pennsylvania.

The infant mortality rates vary greatly for the two sexes and for the various nationalities. The rate for male infants for 1918, 111 per 1,000 live births, was nearly 23 per cent. greater than that for female infants, which was only 90.4. When the comparison is made on the basis of race or nationality of mother a minimum of 71.4 is shown for the infants with mothers born in Denmark, Norway and Sweden, and a maximum of 172.4 per 1,000 births for infants with mothers born in Poland, while for Negro children the rate was 163.

The reports from the registration area show the birth of 15,342 pairs of twins and 147 sets of triplets in 1918—in all 30,123 live births, or a little more than 2 per cent. of the total number born.

The reports for 1,252,552 of the births occurring in 1918 contained information as to the number of children in order of birth. Of these reports, 345,027 were for the first child born to the mother, 264,964 for the second child, 192,339 for the third, 136,366 for the fourth, and 95,963 for the fifth. In the remaining 217,893 cases, or 17.4 per cent. of the entire number for which information on this point was obtained, the total number of children borne by the mother was 6 or more: in 38,343 cases it was 10 or more; in 1,820 cases, 15 or more; and in 58 cases, 20 or more. The total number of children ever born to the mothers of these 1,252,552 babies of 1918 was 4,109,309, or 3.3 per family. The reports for 1,189,682 mothers of 1918 contained information as to the entire number of children now living and gave a total of 3,461,110, or an average of 2.9 living children in each family.

BRITISH PHYSICIANS AS AMBASSADORS TO THE UNITED STATES.—In the issue of the *British Medical Journal* for March 20, attention is called to the fact that there is an interesting precedent for the appointment of a member of the medical profession to be the chief diplomatic representative of Great Britain in the United States. In a recent issue of the *Journal*, we commented editorially on the appointment of Sir Auckland Geddes, K.C.B., M.D., as ambassador to this country. The *British Medical Journal* points out that Sir Charles Vaughan, G.C.G.H., M.D., was appointed Envoy Extraordinary and Minister Plenipotentiary to the United States in 1825. He was the son of Dr. James Vaughan of Leicester and was born in 1774; he was thus eight years younger than his brother, Sir Henry Halford, physician to George IV, and for twenty-four years President of the Royal College of Physicians of London. Henry Vaughan inherited a large property on the death of Lady Denbigh, widow of his mother's cousin, Sir Charles Halford, and changed his name by Act of Parliament to Halford. Charles Vaughan, like his brother, was intended for the medical profession, and was educated at Rugby and Merton College, Oxford. He graduated B.A. in 1796 and M.A. in 1798, and became a Fellow of All Souls in the same year. He attended lectures on medicine both in Edinburgh and London, and took the degree of M.B. in 1800. In the same year he was elected Radcliffe Travelling Fellow in the University of Oxford. He was thus able at an early age to indulge his master passion for seeing other countries. He got as far east as Bagdad and Persia, and after a winter in Russia reached England in 1806. Two years later he entered diplomacy as a member of Lord Stuart de Rothesay's mission to Spain. He carried dispatches during the Peninsular War, and in 1809 published a *Narrative of the Siege of Saragossa.* In the same year he became private secretary to the Secretary for Foreign Affairs, and in the following year was Secretary of Legation (later of Embassy) in Spain. In 1820 he became Secretary of Embassy in Paris, and in 1823 was made Minister Plenipotentiary to the Confederate States of Switzerland. In 1825 he was appointed Envoy-Extraordinary and Minister-Plenipotentiary to the United States, becoming at the same time a Privy Councillor. In 1833 he was created Knight Grand Cross of the Guelphs of Hanover. He left Washington in 1835. Of these years the *Dictionary of National Biography* says: "His services in the United States covered one of the most interesting periods in American history. He was intimate with such men as Story and Clay, and he had to watch such burning questions as that of the boundary with Canada, the position of the South American republics, the slave trade, and the tariff." He was sent on a special mission to Constantinople in 1837, and much of the remainder of his life was spent in travel. He died in London in 1849.

THE MEDICINE OF THE FUTURE IN ENGLAND.—The services of a number of whole-time medical officers are being sought by the British Missionary of Health. These doctors are to act as referees on questions of incapacity of insured persons for work, to give second opinions in diagnosis and treatment, and to organize arrangements for part-time medical referees for the area to assist in the administration of the Insurance Medical Service. The following comment on the project has been made by the medical correspondent of *The London Times*:

> "This, it will be seen, is a very important departure, which, in fact, marks the beginning of the care of the public health as a whole by the State. Most important of all is the qualification attached to the appointment:—'Appli-

cants must be medical men of not less than 10 years' standing, and preference will be given to those having wide experience of general practice, especially among the industrial population.' If our national medical service be divorced from the needs and difficulties of general practice, it is bound to fail.

"The point, indeed, deserves to be considered by all public-minded citizens. Anxious discussions on it are going on in many parts of the country. It is pointed out that the hope of preventing disease lies in the early recognition of it, and that this power can be obtained in general practice, where the first signs of disease are revealed. The new administrator and —it is a great heresy—the new consultant must therefore be recruited not from specially chosen sections of the profession, but from the general practitioners.

"The research worker, too, must know what the conditions of this problem are. There is not too little, but too much, purely academic research in this country—at least in relationship to the utter paucity of clinical research. It is the man face to face with problems like that of pain, of breathlessness, of insomnia, who knows the kind of research which is required. As a single illustration, the action of few drugs is understood. Drugs are given daily in enormous quantities on the very flimsiest grounds. It is waste to say more of it. Nor will work in pharmacological laboratories afford us very much assistance. It is work at the bedside, observation, care, and a rigid control that will yield the secret. The general practitioner is the man who can perform this work.

"For the medicine of the future must be practical and it must be preventive. The day may come—will assuredly come—when it will be as great a crime to allow a case of heart disease to arise as it was during the war to allow a case of 'trench feet' to arise. And the same thing will be true of consumption and a host of other much dreaded maladies. The whole outlook of medicine is changed. The machinery must change also. We are returning to reality in the schools and in the sickrooms of the people."

Depopulation in France.—In previous issues of the Journal we have commented upon the significance of the declining birth rate in France. The following interesting article published in the issue of *The Medical Press and Circular* for April 28, 1920, gives further warning of the peril which threatens the French nation if its present short-sighted policy is pursued:

"A manifesto published by a French contemporary states that in France, in 1918, there were 400,000 births as against 800,000 deaths, *not* counting the deaths attributable to military service. If these figures are accurate, France appears to be in imminent danger of depopulation. One of the great causes of the falling birth rate is stated to be the practice of criminal abortion. The machinery for punishing this crime is so slow and cumbersome as to be easily evaded, so that although the number of women treated in hospitals for the effects of such malpractice appears to be large, only an average of twelve persons are convicted yearly in connection with abortion. The manifesto appeals for a revision of penalties and for their stringent application. The use of the word *avorteuse* throughout suggests that women are chiefly responsible for this practice, and one notes that the manifesto is framed, not in the form of a moral protest against the inherent wrongness of abortion *per se,* but as a national appeal against the 'female abortionists who are depopulating the country.'"

In a subsequent issue of *The Medical Press and Circular,* a correspondent has made the following comments upon the preceding article:

"Its importance is as great in these islands as there; but here we are as a nation going to destruction blindly; in France every intelligent citizen has long known the fate which their deliberate conduct is bringing upon the country. It is amazing. The French are the most intelligent and most imaginative of European peoples; they are never tired of proclaiming their patriotism; and never fail to respond magnificently to the cry of 'the country's in danger,' as witness their conduct in the great war. All intelligent Frenchmen have been for many years fully alive to the fact that the safety of their country has depended upon population; and yet they have virtually all refused to make the sacrifices called for in the rearing of enough children to keep up their numbers to the required strength. The tale was unfolded fully, not for the first time, at the Paris Hygienic Congress in May, 1913, and was reported and commented upon in your paper. The late M. Bertillon, who had devoted a good part of his life in an attempt to rouse his countrymen, was the chief speaker from the ranks of science; M. Ribot and M. Bourgeois—veteran statesmen still at this day in the service of their country—delivered addresses from the point of view of practical statesmanship. They dilated upon France's peril; and this was soon to be demonstrated in the war. Then France had at home something less than 40,000,000 of people against Germany's 70,000,000. At that time France had 1,500,000 aliens on her soil, mostly seeking nationalization, and doing work which might have been done by

Frenchmen had there been enough of them. Many thousands of natives from her colonies were also employed in French mines. She might have supported many more millions at home and countless multitudes in her so-called colonies—all virtually without colonists. France was not, and it seems can never be, in a position to defend herself effectually without allies in a fight to a finish against her hereditary enemy. Had it not been for the support of Belgium and England at the outset of the war she would have been under the heel of Germany in a few weeks or months. Is it likely that France will for long be allowed to hold in dog-in-the-manger fashion her vast overseas possessions? They will be in time over-run if not conquered by more prolific if not more civilized races. We are in a closely similar position. The population question is vital. The State should at once grapple with it. Our Dominions and colonies could take and absorb our natural increase for hundreds of years. Without sufficient influx of British blood, how long will our vast domains continue truly British? Take one example. Australasia is bigger than the whole of Europe. Including New Zealand and the newly acquired German islands, the whole of these vast territories do not together hold 10,000,000 inhabitants. They offer room for hundreds of millions. It will, at the rate of increase during recent decades, take a hundred years for the present numbers to double themselves. It seems safe to prophesy that unless something like a miracle intervenes Australasia will within a century become Japanese—the Europeans being relegated to those parts, sufficient in extent for their comparatively small numbers, the climates of which suit them best.

"Finally, I would point out that a universal practice of limiting the numbers of a possible brood to one or two, constitutes a system of artificial selection which must promote survival of an inferior stock and cause racial deterioration."

The Relation of Diet to Pellagra Incidence.—In the spring of 1916, a study was begun in seven cotton mill villages of South Carolina to determine the relation of factors of a dietary, economic, and sanitary character to the incidence of pellagra. The following summary of these investigations has been published in a recent Public Health Report:

The selected communities were typical cotton-mill villages and were of about average size; none had over 800 or less than 500 inhabitants. Only the families of white mill operatives were included in the study. Pellagra incidence was determined by a systematic bi-weekly house-to-house search for cases carried on continuously from April 15, 1916, to the end of that year. Only patients with a clearly defined bilateral symmetrical eruption were recorded as having pellagra. Only active cases were considered.

Comparisons of diets of nonpellagrous with those of pallagrous households revealed that the non-pallagrous enjoyed a more restricted supply of foods of the "animal protein" group (lean meat, milk, including butter, cheese, and eggs). Increasing supplies of milk or of fresh meat were found associated, one independently of the other, with a decreasing pellagra incidence. No consistent correlation was found between varying supplies of either (1) maize meal, (2) wheat flour, or (3) the common dried legumes, and pellagra incidence. The results of the present study offered no support for the Zeist theory of the etiology of pellagra.

The potential energy in the average food supply of pellagrous households, though somewhat less than in that of nonpellagrous households, nevertheless conformed closely to accepted standards so that the fuel supply of the diet would seem in itself not to be an *essential* factor in relation to the incidence of the disease.

The quantity of protein in the average food supply of the pellagrous households was somewhat smaller than in that of the supply of nonpellagrous households of comparable economic status; but even after allowing for waste this exceeded somewhat the allowance considered by Chittenden as ample for physiological needs, so that a deficiency in total protein would seem not to be an *essential* factor in relation to the incidence of the disease.

The protein supply of the pellagrous households tended to include, on the one hand, a somewhat smaller proportion derived from animal foods and, on the other, a somewhat larger proportion from cereals and the common mature beans and peas, which would suggest that the protein mixture (amino-acid supply) in the diets of the nonpellagrous households is more likely to be physiologically adequate than that in the diets of the pellagrous groups.

The proportion of calories derived from carbohydrate and fat combined is essentially identical in the supply both of pellagrous and of non-pellagrous households. The supply of carbohydrates is, if anything, somewhat smaller in the diets of the pellagrous than in those of the non-pellagrous households, so that the production of pellagra would seem not to be dependent on the excessive consumption of this nutrient.

The diets of the pellagrous households have a smaller average supply of the recognized vitamines than do those of the nonpellagrous, the disparity in supply being particularly marked with respect to the "fat soluble A" factor.

The mineral makeup of the diets of the nonpellagrous households will tend to be superior to, or, at least, is less likely to be deficient either as a whole or in any of its elements than that of the pellagrous households.

The indications afforded by this study suggest that the pellagra-preventive power of a milk or a meat supplement is due to the effect of a correction in the type of diet studied of a deficiency in supply either (1) of some amino-acid or acids, (2) of the ash or of some of its constituents, (3) of some as yet unknown essential (vitamine?), or (4) of all or of a combination or combinations of some of these. Conversely, they suggest that the pellagra-producing dietary fault is the result of some one or of a combination or combinations of two or more of the following factors: (1) A physiologically defective protein (amino-acid) supply; (2) a defective or inadequate mineral supply; (3) a deficiency in an as yet unknown dietary essential (vitamine?). The somewhat lower plane of supply, both of potential energy and of protein in the diets of the pellagrous households, though apparently not an essential factor, may, nevertheless, be contributory by favoring the occurrence of a deficiency in intake of some one or more of the essential dietary factors, particularly with diets having only a narrow margin of safety.

The indications afforded by this study clearly point to an increase in the availability of milk, particularly by increasing cow ownership, and of fresh meat, by all-year-round meat markets as important practical measures of prevention and control in communities of the character studied.

Award of the Katsurada Prize and Medal of Honor.—The Katsurada prize and medal of honor, established by the Japanese Government to be given periodically to some distinguished worker on tropical diseases, has been awarded to Professor Sadao Yoshida of Osaka Medical College, Japan. Professor Yoshida is at present engaged in research work at the Parasitological Laboratory of the University of Illinois.

Departure of General William C. Gorgas.—General W. C. Gorgas, accompanied by Brigadier-General Robert E. Noble, has left for England, whence he will proceed to West Africa to study yellow fever.

Presentation of Portrait of Dr. William H. Welch.—At a recent meeting of the University Club of Baltimore, there was presented a portrait of Dr. William H. Welch of the Johns Hopkins University and president of the club.

Honorary Election of Dr. W. W. Keen.—The Royal Society of Medicine of London has elected as an honorary fellow Dr. W. W. Keen. Dr. Keen has been elected also as an honorary fellow of the American Surgical Association.

Retirement of Dr. Edward T. Reichert.—Announcement has been made of the retirement of Dr. Edward T. Reichert, professor of physiology in the Medical School of the University of Pennsylvania.

BOSTON AND MASSACHUSETTS.

Award of the Flattery Medal to Dr. Theobald Smith.—The M. Douglas Flattery Medal and five hundred dollars in gold have been awarded by the Harvard Corporation to Dr. Theobald Smith, formerly of Harvard University, in recognition of successful scientific research resulting in the prevention of disease and the conservation of health. In explaining the meaning of Dr. Smith's discovery, Dr. Milton J. Rosenau is reported to have made the following remarks:

"Prior to 1893, when Dr. Smith made his discovery, disease germs were thought to have been transmitted through the air.

"During that year, however, while working on Texas fever in cattle, he discovered and proved that Texas fever was transmitted through the bite of an insect.

"Texas fever is a disease resembling malaria in humans. Malaria was afterwards found to be transmitted through the bite of a mosquito.

"Since then a large number of diseases were found to be transmitted by insects. For instance, a flea bite transmits bubonic plague and trench fever, and the bite of lice transmits the typhus germ.

"Dr. Smith was the first one to point out and prove that there are two kinds of tubercle baccilli, human and bovine. This discovery proved to us the necessity of pasteurizing milk.

"Dr. Smith also contributed to our knowledge of hog cholera, anaphylaxis, septic sore throat and other diseases of man and animals. He discovered several new parasites, especially one which causes blackheads in turkeys, a disease every turkey raiser knows to his sorrow. He also has discovered a number of laboratory devices.

"His discovery in regard to insect-borne diseases has been one of the most notable achievements in medicine and has resulted in the greatest good to humanity in prevention of diseases and conservation of health."

Week's Death Rate in Boston.—During the week ending midnight, Saturday, May 29, 1920, the number of deaths reported was 217 against 203 last year, with a rate of 13.99 against 13.29 last year. There were 47 deaths under one year of age against 33 last year.

The number of cases of principal reportable diseases were: Diphtheria, 28; scarlet fever, 58; measles, 253; whooping cough, 73; typhoid fever, 4; tuberculosis, 58.

Included in the above were the following cases of non-residents: Diphtheria, 7; scarlet fever, 12; measles, 4; whooping cough, 1; typhoid fever, 1; tuberculosis, 7.

Total deaths caused from these diseases were: Diphtheria, 3; measles, 2; whooping cough, 6; Tuberculosis, 26.

Included in the above were the following non-residents; Tuberculosis, 3.

Comparative Health of City and Country Children.—An interesting report issued recently by the city health department of Boston shows that contrary to the popular belief, children brought up in the city are healthier than country children. The report contains the following statements by Dr. Woodward, Health Commissioner to the city:

"Recently compiled figures tend to show that the children of the rural class may be handicapped by more numerous physical defects than are city children, even the children living in the poorer portions of the city.

"Health surveys made in different parts of the United States purport to show the following percentages of physical defects among children of both classes: City children, middle and wealthy class, 35 to 50 per cent.; city children, poor, 60 to 75 per cent.; rural children, 70 to 90 per cent.

"Among the causes that probably contribute to the relatively high percentage of defective children in rural districts may be suggested the lack of appreciation by the farmer of the value of sanitary advantages—at least lack of appreciation to an extent sufficient to lead him to provide such advantages, directly or indirectly, or through taxation, for his children. Another factor is probably the absence of prompt and adequate medical and nursing care."

Opposition to Maternity Bill.—At a recent meeting of the members of the House Committee on Ways and Means, Dr. Alfred H. Quessey of Fitchburg is reported to have opposed the bill to provide state aid in maternity cases, stating that it would put the medical profession under the direction of the state in the treatment of maternity cases and would not work to the advantage of the women supposed to benefit by it. Several petitioners for the legislation objected to the amendment, adopted by the Senate, which would permit only married women who have been mothers to be employed in carrying out the provisions of the act. Dr. Eugene R. Kelley, State Commissioner of Health, opposed this amendment because by it unmarried women doctors would be excluded from the work.

Dr. Merrill E. Champion, Director of the Division of Hygiene in the State health department, estimated that the cost of carrying out the provisions the first year would be $197,000. If, however, the benefits were given to all the women in the state the cost would be approximately $1,800,000 the first year.

Mrs. William Putnam Wood favored the legislation as greatly needed by the middle class.

NEW ENGLAND NOTES.

New England War Relief Funds.—The following contributions have been acknowledged by New England branches of war relief funds:

French Orphange Fund	$592,841.40
French Wounded Fund	
(for the temporary hospital at Rheims	359,317.12
(for the American Memorial Hospital at Rheims)	1,532.99

The Massachusetts Medical Society.

WORCESTER DISTRICT MEDICAL SOCIETY.

The annual meeting of the Worcester District Medical Society was held on May 12, 1920, at 19 Pearl Street, Worcester. The annual business meeting of the Society was transacted, with the election of officers for the ensuing year. An address, "Public Health and the General Practitioner," was delivered by Dr. Leslie R. Bragg of Webster. The annual dinner was held in the evening.

Miscellany.

RESOLUTION ON THE DEATH OF DR. ELMER ERNEST SOUTHARD.

At the meeting of the New England Society of Psychiatry on March 25, the following resolution was passed in regard to the death of Dr. Elmer Ernest Southard:

Resolved, That the New England Society of Psychiatry expresses its profound sorrow at the death of Dr. Elmer Ernest Southard, a distinguished member of the Society; that it records its recognition and appreciation of his tireless and talented service in his chosen fields of research, and of his many brilliant contributions to the science and art of psychiatry.

Dr. Southard had a magnetic and attractive personality, great intelligence, keen powers of observation, much knowledge of many scientific fields, philosophic tastes, highly developed reasoning powers, quick imagination and vision, almost unique skill in making new and valuable associations and correlations of apparently unrelated facts and principles, and the ability to feel and express subtile shades of meaning.

These marvellous gifts were lovingly dedicated to the search for scientific truth. He was taken away at the zenith of his power and influence. His inspiration of his students and co-workers will long continue. He was a most forceful and influential figure in American psychiatry.

UNITED STATES CIVIL SERVICE EXAMINATION.

Bacteriologist.

June 22, 1920.

The United States Civil Service Commission announces an open competitive examination for bacteriologist. A vacancy at St. Elizabeths Hospital, Washington, D. C., at $2,500 a year, with temporary increase granted by Congress of $20 a month, and maintenance, and vacancies in positions requiring similar qualifications, at this or higher or lower salaries, will be filled from this examination, unless it is found in the interest of the service to fill any vacancy by reinstatement, transfer or promotion.

All citizens of the United States who meet the requirements, both men and women, may enter this examination; appointing officers, however, have the legal right to specify the sex desired in requesting certification of eligibles. For the present vacancy male eligibles are desired.

Competitors will not be requirel to report for examination at any place, but will be rated on the following subjects, which have the relative weights indicated on a scale of 100: (1) Physical ability, 10. (2) Education, training and experience, 90.

Under the second subject competitors will be rated upon the sworn statements in their applications and upon corroborative evidence.

Applicants must have graduated from a recognized medical college, and have had at least five years' bacteriologic and sanitary experience, including experience in the following lines: (*a*) Performance of autopsies; (*b*) Wassermann work; (*c*) urinalysis; (*d*) blood counts; (*c*) sputum examination.

Special credit will be given for graduate courses in bacteriology, pathology and general sanitary work in the U. S. Army or in domestic or foreign universities; also for experience in similar work in a hospital for the insane.

Applicants must have reached their twenty-sixth birthday on the date of the examination. Age limits do not apply to persons entitled to preference because of military or naval service.

Applicants must submit with their applications their unmounted photographs, taken within two years, with their names written thereon. Proofs or group photographs will not be accepted. Photographs will not be returned to applicants.

Applicants should at once apply for Form 1312, stating the title of the examination desired, to the Secretary of the Fourth Civil Service District, 8th and E Streets, N. W., Washington, D. C., or to the Secretary of the United States Civil Service Board, Customhouse, Boston, Mass., New York, N. Y., New Orleans, La., Post Office, Philadelphia, Pa., Atlanta, Ga., Cincinatti, Ohio, Chicago, Ill., St. Paul, Minn., Seattle, Wash., San Francisco, Calif., or Old Customhouse, St. Louis, Mo.

Applications should be properly executed, excluding the county officer's certificate, but including the medical certificate, and must be filed with the Secretary of the Fourth Civil Service District, 8th and E Streets, N. W., Washington, D. C., prior to the hour of closing business on June 22, 1920.

RECENT DEATHS.

Dr. Charles Jordan, next to the oldest Fellow of The Massachusetts Medical Society, died at his home in Wakefield, June 6, 1920, at the age of 91. Dr. Jordan was born in Saco, Maine, Oct. 17, 1828, graduated from Dartmouth Medical School in 1859, and settled in Wakefield, where he practised until he was retired in 1895. The oldest Fellow of the Society is Dr. Irah Eaton Chase of Haverhill, who joined in 1855.

Dr. Edward H. Currier died at his home in Manchester, N. H., on June 1, at the age of 70 years. Dr. Currier was for many years chairman of the medical board of examiners at Concord.

The Boston Medical and Surgical Journal

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Original Articles.

PRINCIPLES OF POSTURE.

First Paper.

By Mabel Elsworth Todd, Boston.

FOREWORD.

By E. G. Brackett, M.D., Boston.

The significance of the normal posture, and the importance of the part that it plays in the preservation of health need no emphasis at this time, certainly to the medical profession, and hardly to the people in general. However, in the wide interest and enthusiasm which has come in the recogniton of the need of attention to this subject, there is much to be learned in the practical standardization in the determination of what the true normal posture may be, and in the methods of attaining this, particularly in the correction from the abnormal. It is also clear that much in the more popular methods of posture correction needs revision, as well as in the conception of what the normal posture should be, and we are therefore glad to welcome the results of the study and experience of those who have been for a long time devoting themselves to this important subject.

Miss Todd, whose communication follows, has devoted her time for many years to this subject, and has formulated certain principles of true posture and methods of working to this end which deserve the study and discussion of those definitely interested in this work. It is not possible that all of the theories and methods which are presented by Miss Todd will have complete acceptance; there is yet too much to learn in the subject for a uniformity of opinion, but so much of truth, combined with common sense is in this that we are grateful to add to our knowledge from the experience she has gained.

The subject of posture is so intricate and so closely related to the functioning of every part and organ of the body that we cannot approach it with too much respect. In this paper I shall consider it in its aspect to adjustment of the weight of the body at rest. It is important to start with correct position at rest, in order to attain proper coördination of muscles when the body is in motion.

It is essential to find the posture which will secure to the entire mechanism the greatest unity of force with the least expenditure of effort. In every posture assumed to be true three tests should be required,—first, does it make for mechanical freedom; second, is it true to anatomical fact; third, does it establish better functioning to one or more organs? Any rigidity in a structure made up of articulated parts prevents coördinate action. Without coordinate action in the human frame the muscles have lost much of their freedom, and normal functioning, therefore, is impossible.

Gravity is recognized as an elementary force. It acts upon the structure as a whole and also upon each separate part. Faulty adjustment in relation to this law causes interference with the proper reaction of articulated parts and free coördination of the muscles. The deeper we study the subject of mechanics, and of posture, the more we realize how far reaching this effect is upon the entire organism.

Place on one side of an evenly balanced rod a fifty-pound weight. If you wish to retain the equilibrium of the rod you must either place the same weight on the opposite side, or apply your own energy to the amount of fifty pounds pressure.

Move the fifty-pound weight back to the center of the rod and no effort is required to hold it up. It is balanced.

Mechanical law explains that the nearer to center weight is maintained, the less expenditure of energy is required to keep it in equilibrium. It is evident, therefore, that if we discover the position of the best mechanical advantage, this position must correspond with anatomical facts. If the mechanical advantage and the anatomical fact are found in the adjustment, it must follow that every organ of our body would have the most normal functioning possible, and energy, therefore, would not be wasted.

Let us place three granite blocks in a perpendicular alignment. If the median line of the structure passes directly through the center of the weight of each block, gravity will then exercise an equal pull upon the parallel sides of each block. Swing the weight of one of these blocks out of its relationship to the center of the whole. If it has to be held in that position a power foreign to itself must be applied. Refer to fifty pound block.

In the human structure the three principal groups of weight are the skull, the thorax, and the pelvis; if these are balanced at center in relation to the median line, all parts of the articulations will be subject to equal weight, hence there will be no unequal strain upon ligaments or muscles. If any one of these three bony blocks is not supported at the center of the structure it will require muscular effort to maintain it in the position out of that alignment. There is a natural alignment of all the bones to each other. If this natural relationship is disturbed it produces an unequal pull upon muscles and ligaments. Hence, any attempt to hold bones out of their natural alignment involves an unnecessary strain and a waste of energy.

If the center of the weight of each of the three bony "blocks" is maintained at the median line of the structure there would be an equal distribution of energy in the muscles around the entire surface of the wall of each "block." Thus by balancing the weight of the thorax at the center of the structure, the least muscular effort is required and the diaphragm and the intercostal muscles are thereby freed for normal functioning. An elevated sternum swings the weight of the thorax forward from its natural alignment in relation to the pelvis and the skull, and inequality of muscular action is the result; this position forces the shoulders back, thus pulling the weight of the shoulders and the weight of the thorax in opposite directions. The diaphragm has thus lost its normal alignment and its functioning, therefore, will be limited. The muscular attachments around the scapula are also contracted to maintain the pull. The ribs in the back are pushed down, crowding the area around the dorsal vertebrae, and the clavicle pressing upon the first rib produces added strain in the dorsal spine. Assuming that the thoracic weight is perfectly balanced, there will be no muscular effort to hold the sternum in a fixed position and the ribs are thereby released.

The position of the shoulder should next be considered. The particular function of the shoulder-girdle is to protect the thoracic wall from the weight and strain of the shoulder and arm structure and the movements thereof. This is attained only when the clavicular attachment at the sternum is free. This being the only bony articulation between the shoulder-girdle and the thoracic wall, equality of muscular action at this point is important. With the clavicular articulation free, freedom can be attained for all muscles of the shoulder-girdle, and the shoulder-girdle can thus be made to protect the ribs and the spine from the manifold

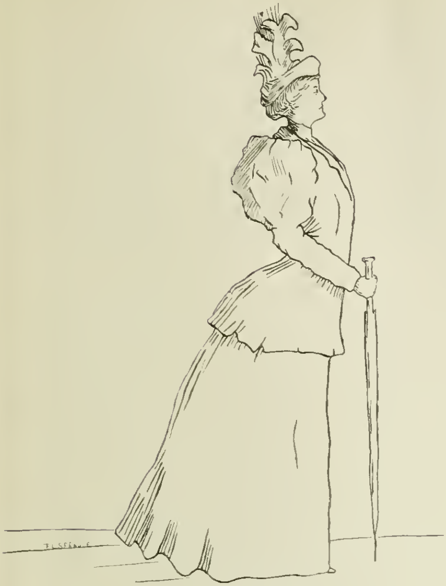

Plate Ia—1895-1900.
(From *The Delineator.*)

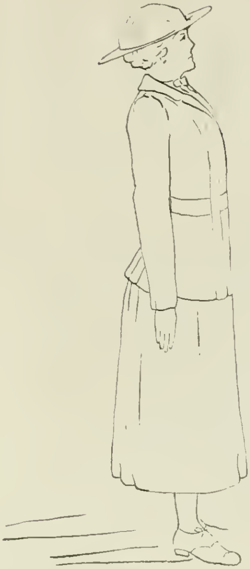

Plate IIb—Military.

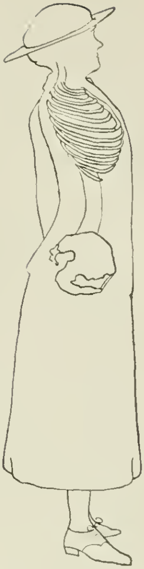

Plate I and IIc—Military.

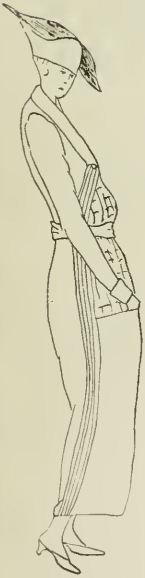

Plate IIIa—1920.
(From *Vogue.*)

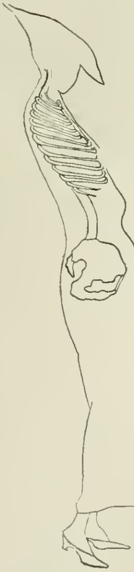

Plate IIIb—1920.

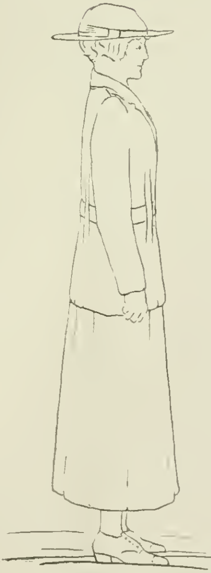

Plate IVa—Balanced.

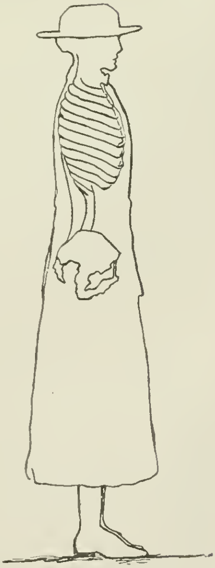

Plate IVb—Balanced.

activities of the arm. Freedom of action of the muscular attachments of the clavicle and spina scapulae would give breadth to the shoulder-girdle, and bring the acromion directly above the median line of the ribs at sides, thus protecting the ribs from the irregular contractions of the arm and shoulder muscles. This position of the shoulder-girdle would be similar to the wooden yoke on which the Hollanders carry their water pails.

By this adjustment the vertebral border of the scapula will assume its normal alignment to the dorsal angle of the ribs, *i.e.*, the perpendicular line of the dorsal angle of the ribs and the vertebral border of the scapula will be parallel. The ribs will thus be freed from uneven pressure of clavicle and scapula, and equalized pull of all muscles of shoulder is attained. With the clavicular articulation free, the humerus will hang directly under the acromion, with equal pull on all muscular attachments between the arms and the ribs. The arms will thus hang in line with the crests of the ilia. This position insures freedom for the action of the lungs and the heart, and for proper flexibility of the dorsal spine. Any muscular effort to hold the chest wall and shoulder superstructure out of this normal alignment in relation to each other is interfering with the freedom of muscular action for normal functioning of thoracic contents.

If there is no antagonizing pull between the shoulders and the chest, the diaphragm is free to functionate normally, *i.e.*, to deepen the cavity of the chest, and to stimulate peristalsis. There will be greater freedom for the action of the intercostal muscles at the dorsal angle of the ribs, thereby securing larger capacity to the back of the lungs. The lung expansion cannot be complete in a fixed or tense wall; the mobility of the ribs must be retained at both their extremities, the spine and the sternum.

A fixed position of any of the articulations of the body out of their natural alignment necessitates compensatory action to relieve the strain. If this compensatory action falls upon a part of the structure where normally no movement should be induced (such as the sacro-iliac) there is an inequality of muscular action and a friction imposed upon all adjoining parts.

The particular articulations which are the most important for normal posture are femur with pelvis, ilium with sacrum, sacrum with fifth lumbar; to these must be added, of course, the position of the sternum and of the clavicles. Of the first three, only one is a legitimate joint. The head of the femur in its relation to the acetabulum is the articulation on which the muscular coördination between the torso and the legs depends. Any loss of freedom in this joint imposes compensatory movement at the fifth lumbar and a strain on the sacro-iliac due to the inequality of muscular pull.

A lifted sternum and forward thorax increases the lordosis of the lumbar spine, thus stretching the abdominal wall and increasing the obliquity of the pelvis, thereby removing part of the support of the fifth lumbar and inincreasing its tendency to slide forward on the sacrum. This increases ligamentous tension and prevents muscular freedom of all pelvic muscles. If the center of the pelvis is directly under that of the thorax and of the head, we have the median line passing through each. The relation of the sacrum to the fifth lumbar will then be equal in pressure around the entire area of the articulating contact. This allows the pelvis to assume a normal position. When the normal position of the pelvis is maintained the quadratus lumborum and psoas muscles assume their normal responsibilities and the muscles of the pelvic floor will also have equality of action. The normal muscular support of the femur in the acetabulum will be the result, *i.e.*, the psoas and the iliacus at the front and the pyriformis and the obterators at the back will have equal pull upon the femur. The head of the femur will then be free in its articulation with the acetabulum. This insures normal muscular coördination between legs and torso without disturbing the natural alignment of pelvis.

The weight of the skull upon the atlas should be perfectly balanced. The occipital condyles should rest evenly upon the superior articulating surface of the atlas. This attains a balanced and equalized relationship between the atlas and cervical vertebrae, thus giving normal perpendicular alignment to all supporting muscles at the base of the skull. In this balanced position of the skull the forehead will be slightly in advance of the chin. The perfect poise of the head would be the natural result of the normal alignment of the pelvis and the thorax, through the equalized maintenance of the muscles supporting these parts, and through the reaction of the normal curves of the spine, *i.e.*, if the lordosis of the lumbar spine is reduced the cervicle spine assumes a more perpendicular position. It is impossible to correct one part of the body without influencing its reflex.

In the following plates are shown the abnormal adjustments forced upon the bony structure by the varying posture of the past twenty years. Nos. 1, A, and 3 A and B.

Plates No. 4, A and B, show the result of maintaining a well balanced position.

When there is effort to maintain the weight of an integral part of a structure out of its alignment with the whole, equalized coördination between all parts is lost. This interdependence of all articulating parts of the human structure requires a close study of the relationship of the articulations to each other, before normal adjustment of the whole can be attained. Reaction between parts is constant, due to the varying adjustment of weight to the median line of the structure. Therefore to correct one part, one must note the relationship of all others, or friction will be the result. In assuming this attitude toward body mechanics, definite, specific proof must be ascertained of the mechanical, anatomical, and physiological advantage of certain positions over others that might appear on the surface to be equally good.

Most of us waste daily more energy than we use. Every man considers a waste of fuel in running his automobile a crime against his pocket-book. It is no less a crime against our organism to waste energy through mechanical misadjustment, *i.e.*, such adjustments as would necessarily produce greater friction in the organism in performing its functions.

The special features to be emphasized in summary are:

First, balance of weight of pelvis, thorax and skull;

Second, position of shoulders and sternum;

Third, relation of head of femur to acetabulum;

Fourth, the position of the fifth lumbar.

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BODILY MECHANICS AND MEDICINE.*

By Lloyd T. Brown, M.D., F.A.C.S., Boston,

Orthopedic Surgeon to Out-Patients, Massachusetts General Hospital.

The term bodily mechanics was chosen insteady of faulty posture because faulty posture is only one of the results which may occur when the human body, considered from a mechanical point of view, begins to get out of line. It may be and often is one of the first symptoms to occur and may be present without any immediate effects in much the same way that carious teeth and adenoids and constipation and many another condition may exist for an indefinite time without any ill effects. Because our attention has been brought to the condition of the eyes and the teeth so much in the last few years we are all paying much more heed to the possible effects of eyestrain and poor teeth than we ever used to do. These are only a part of the whole human body or mechanism and is it not important that we pay attention to the machine as a whole as well as look after some of the small but important adjustments?

The reason why no attention has been given to the question of the mechanics of the body is that very few people agree as to what is good mechanics and what is not. One doctor will say that he himself has always been very round-shouldered and pot-bellied and that he has never had any trouble and that he knows lots of men who are the best athletes who have even worse posture than he has and who never have any trouble. Also, that they know people who hold themselves very well, who are much of the time under the doctor's care or are not well enough to do one half of the work that they should do. All of this is perfectly true but it does not change the fundamental principle which is involved in the mechanics of the human body. This principle is that the use of the body in faulty mechanical alignment is always a potential of trouble. As Dr. Lee has aptly expressed it, those people "with a bad mechanical use of their bodies who are without symptoms, may well be regarded as having compensated for their defects in the same way that we speak of a compensated heart lesion. The majority of individuals with heart disease have for a considerable period no symptoms attributable to their heart. Likewise it is expected that the cases of poor mechanical use of the body will have for a considerable period in the future no symptoms attributable to that poor use. It is likely, furthermore, that, as in the case of the compensated heart lesions, many individuals will continue their compensation throughout life. Indeed they may never be conscious of any defect.''

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* Read at the Massachusetts General Hospital Out-Patient Department Staff meeting, April 7, 1920.

As was stated above, there is much difference of opinion as to the correct mechanical use of the body. The reason for this is because there is no standard on which we can base our opinions. In the anatomical room we learn the so-called normal anatomy, but when we get outside we soon discover that we rarely meet with the anatomical room normal, but that we see a great number of variations which seem to us to be perfectly normal although they may differ very markedly from each other. In other words, we all get a method of classifying our cases into certain groups. There will be a very large group of ptosis cases all of whom have a very typical build, the long, slender body and by x-ray a perfectly typical long tubular stomach and hepatic and splenic flexures which may be down below the crests of the ilia. At the other extreme we find the relatively short-bodied, thick-set individual who by x-ray shows an entirely different shape of stomach and flexures. This individual is also subject to different kinds of complaints than are found in the so-called ptotic patient. There is also an intermediate very large group which may be called a neutral type, and are what we studied in the anatomy room as the normal. They are normal for their type but there is also a normal for the thin type as well as for the heavy type and what is normal for one is not the normal for the other. Just as there are differences in the outside shape of the body and in the shape of the abdominal organs themselves, so will there be a difference in the shape of the bony structures. For example, in the thin type we find in the spine, vertebrae and vertebral articulations which allow a great range of motion, while in the heavy type, the vertebrae and vertebral joints are so shaped that the range of motion is relatively slight. The practical point to be learned from this is that the thin type may show much more marked degrees of faulty postures than the heavy type but from the mechanical point of view the strain may be equally great in either. The thin type being structurally less strong is prone to more faulty mechanical alignments than are the neutral and the heavy types.

The question now comes up, how can one know what is good and what is bad mechanics? In order to get some definite data to work on, it seemed wise to examine a sufficient number of so-called normal men to give one a point of view. Therefore through the kindness of Dr. Lee an opportunity was given in 1916 to examine all the men of the freshman class at Harvard. This examination was done at the same time as the regular physical examination that is given to every man of the freshman class. The examination consisted of taking a tracing of every man as he stood in a natural standing position. When these tracings were collected and studied, they were found to fall rather naturally into four groups, which for convenience were arbitrarily designated A, B, C and D. We called the groups A and B good and fairly good bodily mechanics, and C and D bad and very bad bodily mechanics. (See Figure 1.) There were four points by which we classified the groups. These were as follows: In the A group, first the position of the head. The head is straight above the chest, hips and feet. Second, the chest is up and forward. Third, the abdomen is in or flat, and fourth, the curves of the back are not exaggerated. In the B group we see certain changes which are the first to come and in this group are not marked. First, the head is beginning to be farther forward; second, the chest is not so well up and forward, a condition which must mechanically occur when the head goes forward, because the forward position of the head necessarily relaxes those muscles which arise from the skull and the cervical spine and attach to the sternum and ribs; third, abdomen shows little or no change; and fourth, the curves of the back show little or no change. In the C group the changes from the A group are much more marked. First, the head is now forward of the chest; second, the chest is flat; third, the abdomen is relaxed and is now in front of the chest; and fourth, the curves of the back are all exaggerated. In the D group we find all of the conditions noted in the C group are still more marked. First, the head is still farther forward; second, the chest is flatter; third, the abdomen is entirely relaxed and is much anterior to the chest; and fourth, the back curves are exaggerated to the extreme.

HARVARD UNIVERSITY, DEPARTMENT OF HYGIENE.
The Right Way; The Wrong Way. Where Do You Fit?
Tracings made during examination of 700 Harvard Freshmen.

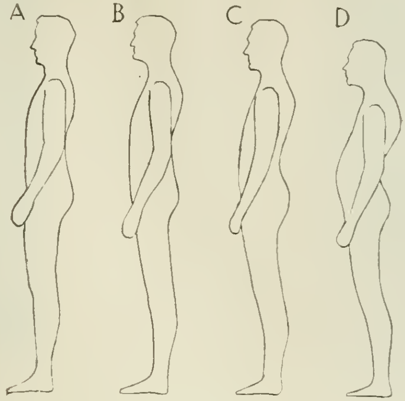

Figure I.

Group A 7.5%
Good Mechanical Use of the Human Body.
1. Head straight above chest hips, and feet.
2. Chest up and forward.
3. Abdomen in or flat.
4. Back usual curves not exaggerated.

Group B 12.5%
Fairly Good Mechanical Use of the Human Body. Note changes from Group A.
1. Head too far forward.
2. Chest not so well up or forward.
3. Abdomen very little change.
4. Back very little change.

Group C 55%
Bad Mechanical Use of the Body. Note changes from Group A.
1. Head forward of chest.
2. Chest flat.
3. Abdomen relaxed and forward.
4. Back curves are exaggerated.

Group D 25%
Very Bad Mechanical Use of the Body. Note changes from Group A.
1. Head still farther forward.
2. Chest still flatter and farther back.
3. Abdomen completely relaxed. "Slouchy."
4. Back all curves exaggerated to the extreme.

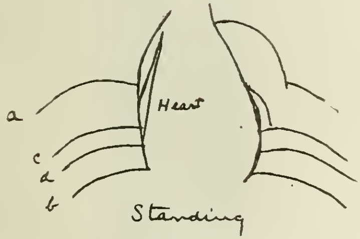

Fig. 2*a*.—Fluoroscopic Tracing of the Diaphragm of an "A" Man in the Standing Position.

a. Position of diaphragm at full expiration.
b. Position of diaphragm at full inspiration.
c. Position of diaphragm at normal expiration.
d. Position of diaphragm at normal inspiration.

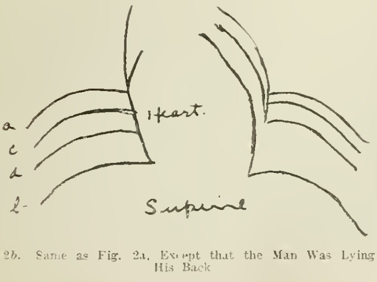

Fig. 2*b*. Same as Fig. 2a, Except that the Man Was Lying on His Back

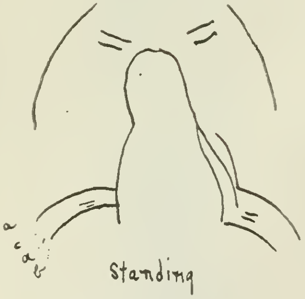

Fig. 3*a*.—Fluoroscopic Tracing of the Diaphragm of a "D" Man (Fig. 5) in Standing Position.

Note the small amount of excursion between full inspiration and full expiration. Note the very small amount of excursion in normal breathing and that this takes place at the position of almost full inspiration, the lowest point of the diaphragm.

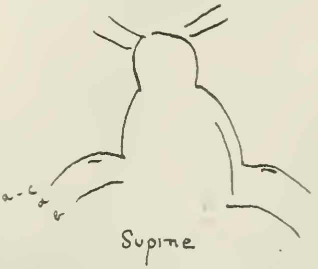

Fig. 3*b*. Same as Fig. 3a, Except that the Man is Supine.

Note that the position of normal breathing has changed from the lowest point, where it was in the standing position, to the highest point or that of full expiration.

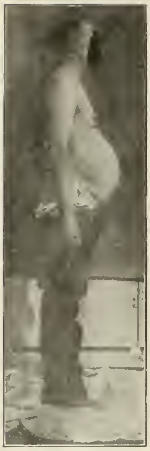

FIG. 4*a*.—Photograph of a Man 66 Years Old. (See text.)

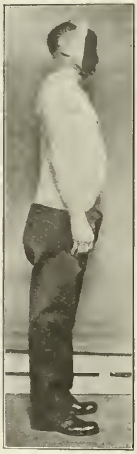

FIG. 4*b*.—Same as Fig. 4a, After Three Months' Education in Bodily Mechanics. (See text.)

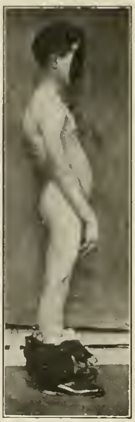

FIG. 5*a*.—Photograph of a "D" Man. Chief Complaint, Constipation, Headache, etc.

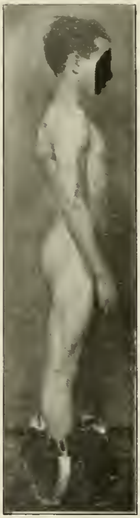

FIG. 5*b*.—Same as Fig. 5a, After Three Months Education in Bodily Mechanics.

There were 746 men examined. 7.5% of these were in the A group, 12.5% were in the B group, 55% in the C group, and 25% in the D group. In other words, 20% of the men used their bodies in good or fairly good mechanical lines and 80% were bad or very bad.

In order to find out if there was a possible relation between the above classification and the physical findings and symptoms the statistics were studied in relation to the medical findings. This study showed that no man in Class A or B complained of backache, while over 6% of Class C and over 8% of Class D gave a history of backache. Functional albuminuria was much more common in Classes C and D and more common in D than in C. Operations for appendicitis were progressively more common as one went from A to D. On

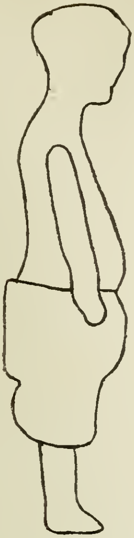

Fig. 6a.—Tracing of a Child of Four Years. Sent to Posture Clinic for Cyclic Vomiting.

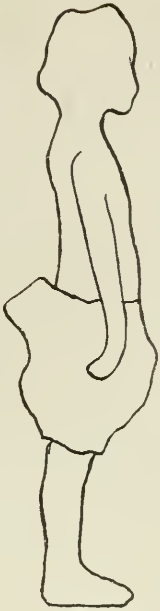

Fig. 6b.—Same as Fig. 6a Five Months Later. The Bodily Mechanics are not Perfect, but there is a Marked Change for the Better. (See text.)

the other hand, the removal of the tonsils and adenoids which was done as a rule in early life, occurred rather more frequently in the A and B groups.

Last fall, 1919, a similar examination to that of 1916 was again carried out. This time, however, the bodily mechanics was computed by two criteria; first, how the individual used his body in standing, judging not only from the position which he assumed naturally, but also from the position he assumed upon being directed to put forth his best efforts; and secondly, how the individual used his feet. This examination was done by six physicians who made the complete physical examination. The grading of these several physicians was remarkably uniform and while there was undoubtedly individual variation, the factor of personal equation seems to have been very slight. The complete classification of the 513 freshmen was as follows: A, .97%; B, 14.8%; C, 49.3%; D, 34.8%.

A comparison of this classification with the medical findings showed that in the group graded D on account of the feet, slightly over half had a history of trouble either in the past or at the present. Usually, however, the compensation was fair for ordinary activity. Like the 1916 experience, the A and B men did not give histories of backaches, but there was a definite percentage among the C and D groups, being nearly 10% in the D group which was higher than the C group. Functional disturbances, such as tachycardia, instability of the systolic blood pressure, etc., were most common in the students classified as D. Also the frequency of constipation, headache, etc., was greater in the D group than in any other. This year a more comprehensive study was made of those cases which showed albuminuria. Forty cases of albuminuria, or 7.7%, were found. These cases were all followed, repeated examinations were made, and finally there remained seven cases of persistent albuminuria, apparently all of the same type, namely that they had albuminuria during the active part of the day, but did not have it when resting in bed. Six of these seven cases were found to have been classified in the D group and one in the C.

The relation between such faulty mechanical use of the body as seen in the D group and the findings which have just been given is of course very obscure at the present time and until some scientific experimental work, which takes into account the possible effects of good and bad mechanical use of the body on the physiology of the body is done, it will remain in doubt. However, it is of interest to consider what may be some of the effects of faulty mechanics. We can see from the chart (Figure 1) what the effects are on the outside shape of the body, as, for example, the D man. The fluoroscope makes it possible to see some of the inside effects. Take for example the diaphragm. This tracing (see Figure 2 a) shows the diaphragm of an individual who would be classified as A. Note first the amount of excursion there is between full expiration (a) and full inspiration (b). Note also the amount of excursion that is present in the ordinary breathing: that the position where this breathing takes place in relation to the extremes of the diaphragmatic excursion is about half way between the two. Compare these findings to what is found in an individual of the D group as is seen in this tracing (see Figure IIIa). Note first the relatively small excursion of the diaphragm at the extremes of expiration and inspiration. Secondly, the very small amount of excursion in the ordinary breathing and that this breathing takes place at practically the lowest position of the diaphragm. It does not seem illogical to think that this very small excursion may have a very definite effect on the abdominal circulation since the pumping action of the diaphragm is one of the big factors in emptying the abdominal veins, especially in the upright position. The effect of change of position of the body from the upright to the lying is shown in these tracings (Figure IIb). In the A man but little change is found in the relative position of the diaphragm to the spine and sternum while in the D man (Figure IIIb) it will be seen that the diaphragm as a whole has relatively taken a much higher place than in the standing position. It will also be seen that the place where the ordinary breathing takes place has changed but slightly in the A man while in the D man it has gone from the lowest to nearly its highest point. It was interesting in carrying out these experiments to note that in the A man it made a great difference in the excursion of the diaphragm not only in the extremes of breathing but also in the ordinary respiration whether there was a pillow under the head, the arms were at the sides or over the head, or the chest was put into a position of hyperextension. I have always wondered whether these considerations should be taken account of in the experimental work that is being done on the respiratory functions.

The length of time allotted to this paper does not permit further discussion of the effects of faulty bodily mechanics. It is important, however, to say a word about the treatment of these conditions as we meet them in the O. P. D. First of all, it is absolutely necessary to have a complete physical examination in order to rule out any organic lesion and to know as far as possible what one has to deal with.

This tracing (Figure IVa) is of a man of 66 years of age who came to O. P. D. because he had had a distressed feeling in the epigastrium for three years. This had been gradually getting worse so that at the time of his entrance he was a good deal bothered with it. He had been treated for a primary lesion and the question of tabes was later ruled out by a negative Wassermann of the spinal fluid. He was sent to the Posture Clinic in January, 1916. Here he was fitted to a belt and what was the really important thing and should always be done whenever a belt is fitted, the reason for the belt was explained and he was shown a few educational exercises to teach him how to get back to a better mechanical use of his body. He was much interested and did his part faithfully. Three months later this second tracing (Figure IVb) was taken and it shows that he had been able to make a marked change in his mechanics. He was also feeling much better. He made the remark after reporting to the clinic about once a week for five months that he felt at least 25 years younger. He had practically no distress in the abdomen. He was followed for two years at very rare intervals and the last note on the record reads "Has had a good year. Belt repaired."

The second case (see Figure Va) is the one shown for the tracings of the diaphragm (see Figure IIc). He was 20 years old and came to the O. P. D. for marked constipation and a dull ache in the epigastrium lasting for three or four hours and having no relation to food; also frequent headaches. The x-ray was normal except for a very active peristalsis. He came to the Posture Clinic. He likewise was given a belt and the condition was explained and the educative exercises were shown. Especial care was taken that he understood what he was to do and that he did it, at least, while he was at the clinic. When seen again in a month the bowels were moving every day and he was taking only Russian oil three times a day. When seen a year later the bowels were still moving well. He had continued to do his exercises and said that he felt much better, only occasionally having a little pain in the stomach (see Figure Vb).

The last case shows where the treatment of these mechanical conditions should begin (see Figure VI). This little girl was referred from the children's room for what was called cyclic vomiting. The condition had been somewhat helped by a careful dietary but was not entirely controlled by it. Although she was very young, she was given only some exercises and some resting positions which she was to take regularly. The mother followed the directions out most carefully and reports that there have been no attacks of vomiting since she started in with the rests and exercises.

The point that these cases bring out is not that the correction of the mechanical defects is the whole thing but that the correction of them is one of the ways to help nature compensate for the defects which may be present from heredity, environment and occupation.

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THE MALNOURISHED CHILD IN THE PUBLIC SCHOOL.*

By William R. P. Emerson, M.D., Boston,
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The care and feeding of infants has become not only a science, but an art. Its principles are now quite generally understood in the home and good results are in evidence throughout the country. When we come to children of pre-school and school age, however, very little medical attention has been given them, especially as regards their nutrition and growth. In fact, malnutrition has not been considered a medical diagnosis.

This explains why children who are retarded in their growth from one to three years still pass through our hospital clinics unnoticed. Private physicians find their vital organs normal, recommend a tonic, and do not consider them subjects for medical care. School inspection fails to identify them as being physically unfit because the human eye cannot see through several layers of clothing, and in most states the school physician is not allowed to examine children without clothes. Furthermore, the school doctor's work is directed chiefly to protecting the children against infectious diseases, such as scarlet fever, etc., rather than giving them individual treatment even if their state of nutrition were recognized.

The disclosure of the fact that about 30% of all our young men were found physically unfit in the draft was as much a surprise to the medical profession as to people in general. The significant point is that this unfitness did not come upon them suddenly when about to enter the army. As a matter of fact, the weighing and measuring of thousands of school children show this same percentage of unfitness in all the school grades, and extending even into the pre-school age. Until this fact is more widely recognized, we shall continue to graduate from grammar and high schools thousands of children, educated, but physically unfit for the burden of life.

This condition, which we call malnutrition, is not simply under-nutrition, but exhibits definite physical defects which can be found on a careful physical examination. These defects constitute the most frequent cause of the malnutrition, and average between five and six to each malnourished child. Accompanying them is usually a history of lack of endurance, both mental and physical, and a group of nervous symptoms which are found almost without exception as part of the clinical picture of malnutrition.

In our early study of this retarded growth in children, various theories were postulated as to the prime cause. In my own experience, the first cause considered was that of poverty. But we have found this the essential cause in less than 5% of our cases. Another cause assigned was improper food, but in our large cities food, as a rule, is well prepared, and this could not explain the prevalent condition where it was known the food was excellent. Tuberculosis was, of course, one of the assumptions, but was found as the chief cause in only the exceptional case. Hereditary syphilis could not explain the condition, as it occurs in less than 3% of the cases. Heredity was blamed in its turn until we found by our records that most of the children were perfectly well at birth, and the children who did have a poor start had usually received unusual care and therefore became well and strong beyond the average.

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* Paper read before a joint meeting of the National Education Association and the American School Hygiene Association, Cleveland, Ohio, February 27, 1920.

Having thus eliminated these various theories one by one, we had still to find the active cause of this widespread malnutrition, and why, with all the child-helping organizations, national, state, and local, there seemed to be no great diminution in the percentage of cases. This afternoon I shall attempt to show some of these causes, first by a group of Cleveland children, and second by slides from our nutrition clinics in New York, Chicago, and Boston.

The group of children here on the stage are members of nutrition classes recently established by Miss Mae MacNab, secretary and chief worker of the Cleveland Nutrition Clinics, a new organization associated with our Nutrition Clinics for Delicate Children in Boston. I have not seen these children before this moment, but I am so sure they will present the same classic symptoms of malnutrition that I do not hesitate in using them as a demonstration. I am also sure of the results obtained even in the few weeks they have been attending Miss MacNab's nutrition classes that again I do not hesitate to present their record and to use their charts as illustrations.

Our method in these classes is to weigh the children once a week, and put at the head of the class the child who has gained the most in that period. These sixteen children are, therefore, arranged in this way. You will see by the chart that the first child has a gain of 2½ pounds to his credit, and several have a gain of 2 pounds in a single week. When you realize that 2½ pounds is 20 times the average rate of gain for a normal healthy child, you will appreciate what a remarkable response these children make to this form of treatment.

Before entering the nutrition class each child is given a thorough physical examination that his defects may be discovered and removed, so that he will be physically "free to gain." The mother is asked to report each week with the child, who is weighed in her presence, and in case there has been no gain the possible cause of the failure is discussed with both mother and child, and usually becomes apparent. With the removal of this cause the child who made no gain one week is often found at the head of the class the following week.

Each child has a weight chart, arranged in the same order, according to rate of gain. The red stars indicate that he has taken his mid-morning and mid-afternoon lunches every day during the week, and the blue stars represent the same faithfulness with his rest periods. The gold star is given to the child making the greatest gain for the week. These charts are of great help in exciting the child's interest and enlisting his coöperation. The presence of the mothers ensures home support, and the nutrition worker advises in regard to diet and daily program.

We try to secure a modification of the school program also, and thus coördinate the four factors which we find essential in safeguarding the child's health; namely, the Home, Medical Supervision, the School, and the Child's Own Interest. These factors may be considered a parallelogram of forces working for the child's good, and it is because most child-helping organizations are operating on only one or two sides of this parallelogram, leaving the child's health unprotected on the other two sides, that their efforts have in a great measure failed to bring permanent results.

I will also show you some of the characteristic features of malnutrition almost invariably found in these children. (Several children stand showing side view to the audience.) You will notice the prevalent fatigue posture, round shoulders, projecting shoulder blades, protruding abdomen; also the pallor and lines under the eyes. The time is so short that I will now dismiss the class without the usual discussion with the mothers present, although I am sure this would bring out some interesting points. (Dismisses class.)

In order to show concretely the results of our work, I have brought with me a set of slides showing children treated in our Boston and New York clinics. (Slides shown.)

Among the principal diagnoses found are insufficient food (not enough calories per day); fast eating; sugar habit; omission of morning and afternoon lunches; omission of mid-morning and mid-afternoon rest periods; over-fatigue from a full-day school program and from school examinations; over-fatigue due to late hours, activities outside of school, such as clubs, music and dancing lessons, etc.; too many home studies; failure to gain because of obstructions to breathing, such as adenoids, tonsils, deviated septum, etc.; the use of tea or coffee; the omission of cereals or milk from the diet.

I am showing several class groups to illustrate how surely we can depend upon the parents to do their part. Many mothers have come to us at the Massachusetts General Hospital in Boston from cities forty miles distant, rarely missing a single class until their children became well. In a class of state charges we had a remarkable demonstration of the coöperation of even foster mothers who responded 100% in the group shown, one foster mother being present for each child in the class.

The child's own interest is, however, one of the most important factors in successful treatment, as this reacts on the home and ensures the carrying out of the program recommended. We have been asked by mothers to continue our clinics in the summer as it helped them so much in the control of their children.

The pedagogical value of the class method is very great. The child at the head of the class, who, by following directions, has shown a good gain with improved physical appearance, is a great stimulus to others who are at first fearful, but soon learn that such essentials of health as open windows, proper diet and rest, good food and health habits, can be secured in practically every home, whether among the rich or the poor, and will almost certainly bring about the desired results.

We have been able to get children even on the East side of New York, during a war year, to show a gain from 100 to 250% beyond the normal rate of growth for well children, without extra expense and in their own homes; and once the child becomes well he stays well because he has learned how to be well in his own environment,—a most important point in securing permanent results.

Besides these groups, I am showing you many individual cases, because this is an individual problem which must be studied with reference to the needs of each child, and cannot be met by a broadside directed against a large group. The diagnosis of malnutrition is just as individual as any other medical diagnosis. For example, if we make a diagnosis of pneumonia or typhoid fever, each case will require its own treatment appropriate to the individual conditions. In the case of malnutrition the cause must be determined in each case and removed before the child gets well.

Among the charts shown are some of our early cases, where children were under observation for a period of 20 to 40 weeks with practically not a single pound gain in weight, even though some of them were taking between 3000 and 4000 calories of food per day and we were doing everything we could to help them. However, until we made a definite diagnosis of the cause of their failure to gain, which might be any one of the causes previously mentioned, we could not produce results.

These children represent exactly the same problem as the 30% among the pupils in our schools who, by weighing and measuring, are shown to be physically unfit to carry the work of a school program that is planned for the normal child. Under the present system the stress of the school burden is increased for these undernourished children, because the efficiency of the teachers is measured by their ability to force them through the grades, and this frequently imposes extra home work or additional tasks upon the already overburdened shoulders of the malnourished child.

The remedy for this condition lies in separating the malnourished group from the well children and adapting the school program to their strength. This can best be accomplished by providing scales in every school, and at the beginning of each term weighing and measuring every child, and selecting those who are 7% or more under weight for special treatment. This group should be relieved temporarily from the pressure of the full program, and the worst cases should be put in open air, or at least open-window rooms. The great majority, however, can continue in their grade if they are excused at 10.30 so that they may go home for a mid-morning lunch and a rest period, returning after the noonday meal for the regular afternoon session. Where this is not possible because of distance, the children should be provided with a morning lunch and given a place to rest in the school building, with an army cot and a blanket.

A malnourished child is not capable of doing more than an hour or an hour and a half of concentrated work without overfatigue. But many of these children actually do better school work on a shortened program than the average child of their grade. This modified school program is being taken up by a number of cities and towns on the ground that health is more than education, and that malnutrition should be completely eliminated.

In a class of 14 children selected from a group of 600 in Boston, an average period of ten weeks only was needed for their recovery. However, this was in an institution where we had control of their activities the entire 24 hours. In any case there need be no serious interference with the work of the school, and as a matter of fact the over-fatigue incident to the malnourished child's efforts to keep up with the full schedule is in itself an obstacle to practical efficiency. If his condition is not recognized he will be a drag on his class throughout the grades, and he finally graduates, educated it may be, but physically unfit.

To sum up, the five principal causes of malnutrition, named in order, are: Physical defects, lack of home control, over-fatigue, improper food habits, improper health habits. These causes can be removed and the child made well in his own home. This is the work of our nutrition clinics and classes. So much demand has arisen for information in regard to the operation of these classes that we have formed an organization called *Nutrition Clinics for Delicate Children*, with headquarters at 44 Dwight Street, Boston, where reprints and further information may be obtained by addressing the Secretary, Miss Mabel Skilton. Information can be secured also from Miss Mae MacNab, Secretary, Cleveland Nutrition Clinics, Williamson Building, Cleveland, and from Mrs. Ira Couch Wood, Director Elizabeth McCormick Memorial Fund, 6 North Michigan Avenue, Chicago. These organizations are associated with us in this work.

COMPARATIVE STATISTICS ON PHYSICAL EXAMINATIONS OF PUPILS OF THE BOSTON PUBLIC SCHOOLS FROM DECEMBER 1, 1915, TO MARCH 1, 1920, AND REMARKS, WITH ESPECIAL REFERENCE TO MALNUTRITION.

By William H. Devine, M.D., Boston.

Director of Medical Inspection, Boston Public Schools.

The steady decrease in cervical glands continues, and, as stated last year, this is *partly due* to the fact that school physicians have been instructed not to report slightly palpable cervical glands when secondary to adenoids, tonsils, carious teeth, pediculosis, or other allied condition. These cases are kept under observation, and only the primary causes reported.

Pulmonary tuberculosis shows a steady decrease.

Cardiac disease remains practically the same for reasons which have been stated in previous reports.

The principal causes of malnutrition in school children are: insufficient and improperly prepared food; impaired digestion due to imperfect mastication, bolting of food, use of tea and coffee, over-indulgence of ice cream and candy; late hours, lack of fresh air and proper exercise.

The first, insufficient food, is a social problem, the others, medical. The latter should be corrected by training the child to take the properly balanced diet, or substitutes; to masticate the food thoroughly; by instructing mothers on the selection and preparation of food, the value of exercise, fresh air, and other hygienic measures.

The Public Schools of Boston are doing much to combat malnutrition. Commencing in 1909, the pupils in the first grades were weighed and measured. These children were weighed and measured annually until 1919. The data from these records are in the hands of Dr. William T. Porter of Harvard Medical School. It is expected that his deductions will be published at an early date.

The present status of weighing and measuring is as follows: Nurses weigh and measure the children in open-air classes every month. All cases of malnutrition are weighed and measured every month. To this is the added requirement that all children in the following districts be weighed and measured annually by nurse: Blackinton-John Cheverus, Washington, Thomas Gardner, and John A. Andrew.

Beginning September, 1920, all children will be weighed and measured at the time of physical examination. These data will be recorded on Physical Examination Record Card.

All open-air class pupils, and malnourished children not in open-air classes, are reëxamined physically in January of each year. They receive proper hygienic instruction from physician and follow-up visits to homes are made by nurses.

Commencing five years ago (1915-16) statistics show that 2.12%, or one in every 47 was malnourished; in 1916-17, 1.64%, or one in every 61; in 1917-18, 1.99%, or one in every 50; in 1918-19, 2.34%, or one in every 43; and for the present year 2.02%, or one in every 44.

	1915-16	1916-17	1917-18	1918-19	1919 to Mch. 1, 1920
Total number pupils examined	99,862	104,287	104,762	100,564	95,118
Total number without defects	30.781	38,318	43.128	43,328	40,889
Total number with defects	69.081	65,969	61.624	57,226	54,229
Defects as follows:					
Defective nasal breathing:					
Anterior	1.292	1.297	1.108	826	566
Posterior	5.966	5,282	4,975	5.338	5.894
Hypertrophied tonsils	18.444	14.806	14.037	12.734	12,642
Defective palate	351	169	121	65	42
Cervical glands	18.841	7.746	7,201	4.777	3.160
Pulmonary disease:					
Tuberculosis	44	22	28	15	11
Arrested tuberculosis	—	—	5	—	—
Non-tuberculous	683	453	456	516	452
Doubtful	—	1	—	—	—
Cardiac disease:					
Organic	1.330	1,406	1,624	1,572	1,399
Functional	1.668	1,716	1,864	2.209	2,052
Nervous disease:					
Organic	74	48	46	26	51
Functional	221	179	138	149	163
Chorea	43	23	33	14	15
Orthopedic defects:					
Tuberculous	88	76	63	51	35
Non-tuberculous	1.698	1.770	1.774	2.221	1.996
Skin	3.071	2.978	2.308	2.007	1.619
Rickets	383	326	284	132	129
Malnutrition	2.110	1.712	2,087	2.359	2.162
Mental deficiency	431	448	627	558	685
Totals	56,738	40.458	38,779	35,599	33,073
Defective teeth	56,750*	55,638*	50.507	44.531	43.142
Grand Totals	113.488	96,096	89,286	80.130	76,215

* During the year 1915-16, and from October 1. 1916, to January 1, 1917, defective teeth were classed as primary and secondary. In some instances, if a pupil had defective primary and defective secondary teeth, it was recorded as two defects instead of one. In order to avoid duplication of defects, it was thought advisable to record defective teeth as one defect without regard to whether they were primary or secondary. This method was adopted commencing January 1, 1917, and precludes comparison for the two years.

It is encouraging to note that the percentage has dropped from 2.34 to 2.02. This is not surprising when the vast amount of work done by the Medical Inspection Department in combating this condition is considered.

There are statistics on malnutrition from many sources that savor of the sensational, but the above figures from the Boston Public Schools may be considered fairly accurate inasmuch as they were taken under practically the same conditions each year, by the same corps of medical inspectors, and the same children examined.

The following statistics are quoted from other cities:

City	Number Examined	Number Malnutrition	Per Cent.	One in Every
New York, N. Y.	300,000	14,000	4.8	21
Cincinnati, Ohio	36,438	1,619	4.6	22
Cleveland, Ohio.	61,578	671	1.1	91
Newark, N. J...	27,971	940	3.3	30
Rochester, N. Y.	18,497	945	5.0	20
Worcester, Mass	18,432	389	2.18	47

Lunches are prepared in Boston schools for open-air classes and other malnourished groups at cost price, about two cents; in some cases three cents, according to the nature of the lunch. Some of the children bring lunch from home, while a number of schools distribute soup prepared by the Food Economy Kitchen. In this connection, I desire to state that the Food Economy Kitchen has rendered great assistance in furnishing the school children with a uniform and economical food at cost price. During the present school year this organization furnished about 500 quarts of soup daily, which means feeding about 2,500 children per day. The Boston School Committee has coöperated with and has endorsed every movement for the betterment of lunch service.

The lunches prepared in school consist chiefly of cocoa and crackers, milk and crackers or bread and butter, or soup or chowder in variety.

Children bringing lunch from home are advised to select plain nourishing food, bread, fruit, etc.

A report compiled in December, 1919, showed that approximately 4,721 children in the elementary schools, exclusive of open-air classes, were served with lunches, and that approximately 23,370 children brought lunches from home. Thirty-five thousand is a safe estimate for the present number of pupils receiving luncheon or bringing same from home. The number of children in open-air classes is about 700. Every child in the open-air class received a luncheon. If he cannot afford to pay for it, means are supplied from a private fund. In addition to this, about 8,000 lunches are *served* at the various high schools each day by the Women's Educational and Industrial Union.

There may be children in the elementary schools who do not need the recess lunch; a sturdy child who has a substantial breakfast at 8 or 8.30 A.M., and dinner at noon. There are children apparently normal who do not have a substantial breakfast. Teachers and nurses will bear me out in the statement that there are many pupils in the elementary schools who have no breakfast or who have exceedingly light ones. It would appear that recess lunch is needed by most children.

As many people favor public feeding, it may be interesting to quote the law on the subject The matter rests with the people.

Chapter 575, Acts of 1913:

Section 1. "The city council of a city or the selectmen of a town may provide meals or lunches free or at such a price, not exceeding the cost as they may fix, for children attending its public schools, and cities and towns may appropriate money for this purpose."

Section 2. "This act shall be submitted to the voters of any city or town at the municipal election in any year if a petition to that effect, signed by not less than five per cent. of the voters, is filed with the city clerk or town clerk, as the case may be, not less than one month before said election; and if accepted by a majority of the voters voting thereon, it shall take effect in such city or town. Otherwise this act shall not take effect."

* * *

American Control of Typhus in Europe.—Attempts are being made by American representatives to organize health control centers in Europe for emigrants to America, in order to prevent the spread of typhus, cholera, and other diseases to this country. Surgeon General Blue, who is undertaking the control of infection at its source, arrived at Brussels on May 26. He intended to go directly to Trieste, but was advised to change his plans on account of local rebellions and strikes.

Clinical Department.

RUPTURE OF THE RECTUS ABDOMINIS MUSCLE.

By R. J. Behan, M.D., F.A.C.S., Pittsburgh, Pa.

As it is very unusual to have a rupture of the rectus abdominis muscle, due to indirect violence, the report of a case which I have recently had, in which there could be no doubt of the rupture, and in which the relationship of this rupture with indirect violence could be definitely established, seems to me to be of value.

The patient was a Mrs. R. S., who entered St. Joseph's Hospital (No. 1539), Series 19, on December 10, 1919, and was discharged on December 24, 1919.

The diagnosis accompanying the patient was acute appendicitis. The diagnosis had been made by surgeons connected with two other hospitals, to which the patient had previously gone for consultation. However, as soon as she heard the word "appendicitis," she was not convinced, as she had no vomiting and no fever. She said she had always been taught that the two conditions were associated with appendicitis. Therefore, when a diagnosis of appendicitis was made, she was not satisfied. She thought the condition was a sprain of the abdomen. Therefore, when the diagnosis was made by us of rupture of the rectus muscle, that is, as we explained to her, of one of the muscles of the abdominal wall, she was perfectly satisfied, agreed to enter the hospital, and submit to an operation.

The history of the patient and the examination as taken from the hospital record, is as follows:

Mrs. R. S.

Chief Complaint. Pain in the right side.

Analysis of Chief Complaint. On December 6, sharp pain in the right side came on suddenly. Just before the onset of the pain, the patient was lifting a heavy window. She made a sudden jerk in raising the window and immediately felt the pain, which was very sharp at the time. Paid very little attention to it until Sunday, when she began to feel sharp pains in the right side on coughing or sneezing. Pain would cease while lying quietly, but would return when she raised up. No headache or nausea. Coughed up some blood on Sunday.

Past Personal History. Had St. Vitus dance four years ago. Influenza. Hay fever during the summer. Pregnancies, one; child living and well. Menstruation, regular; four weeks type; duration, four days; slight pain.

Physical Examination. Listless; expression of pain on coughing or deep breathing. Nose, deviated septum. Teeth, false. Throat, negative. Neck, no glandular enlargement. Chest, no supraclavicular changes from the normal. Lungs: Although the patient coughs, there does not seem to be any involvement of the lungs. Heart, negative. Abdomen is tender to the touch. Tenderness marked on the right side, especially over the lower one-half of the rectus which is in tonic contraction. In the center of this rigid area, there seems to be a slight groove where the fingers can be pressed down deeply through the rectus muscle. On coughing. there is a slight bulging of this area. The tenderness is not really confined to any one particular location on the right side, as the whole side is tender. The inguinal rings are not enlarged and no bulging in these areas is noticed on coughing. By pressing on the right side in a direction towards the right, the pain is very severe in the lower part of the abdomen. Liver, no enlargement. Stomach, about two fingers below the costal area. Reflexes, patella exaggerated. No enlarged glands.

Physical examination by Dr. R. J. Behan, December 11, 1919:

On the Abdomen. There is a point of tenderness to the right and above Poupart's. On making digital examination, there is a place on which pressure causes a slight separation of the fibres of muscle. The separation is V-shaped with the apex of the V upward. On moving or coughing the patient complains of pain at this point. The cecum is dislocated downward. There is slight tenderness over cecal area. The most pain is at a point at the lower end of cecal resonance. No pain in urinary bladder area. Slight tenderness over right flank, axillary line, pain in back, lumbar region, costovertebral (on pressure).

Diagnosis. Rupture of the right rectus abdominis near to its insertion into the horizontal ramus of the pubes.

Operation. December 11, 1919. The usual preparation of the patient was made. The incision was carried down through the skin on the right side to the sheath of the rectus. The incision extended from about the level of the umbilicus to about two inches above Poupart's. The skin was retracted, the sheath of the rectus and Poupart's ligament was exposed. It was noticed that in the lowermost area it was more adherent to the superficial fascia than is usually the case.

The sheath was incised and retracted toward either side. Beneath it the muscle was found to be dark in color and the fibres were partially separated from each other. There was also noticed considerable amount of organized blood, although it was not in the form of a clot, but seemed to be more or less diffused through the muscle. The rectus was then drawn toward the inner side and the posterior surface of the muscle was exposed. Here there was found a well defined layer of blood clot, anterior to the final sheath which is present over the rectus muscle. This could be torn away by means of the forceps but held fairly well. The muscle itself showed several places where the longitudinal grooves were rather marked. There was also a bundle of fibres. about one-half inch or more in circumference, which had been torn loose, and had contracted, leaving a considerable interval between the two bundles or ends of the fibres. This interval was about two inches long.

The muscle was very friable, tearing on the least tension. At the time of the accident the separation apparently had occurred down near the insertion of the rectus muscle into the tendinous portion adjacent to Poupart's.

An incision was now made through the posterior sheath of the rectus and peritoneum. The cecum was found extending low down with an appendix which was turned up under the cecum and rested beneath it. The appendix was not apparently diseased, but was removed, the meso-appendix being somewhat shorter than normal.

After invagination, it was found that there was quite a bulging of the haustra of the cecum, so that there would have been left a diverticulum of the cecum at this point. Therefore the cecum was invaginated by Marvel's technic, the anterior and the external linea-longitudinales of the cecum being sutured together with linen. The abdomen was closed by the usual technic. No lanolin was used. Tension sutures were used on the surface. The ovaries and tubes were not examined, although an examination was made of the internal inguinal ring and it was not found to be dilated. The patient otherwise apparently was normal. The gall bladder was examined and found to be normal. The next day the patient said she had none of the pains of which she had formerly complained. Recovery was uneventful. The patient was discharged from the hospital in twelve days.

This patient is one of the very few cases in which a rupture has been determined, either postmortem or at operation, of the rectus muscle from muscular exertion. However, the presence of the laceration of the rectus cannot be doubted, and apparently must have taken place at the time of the muscular exertion, when the patient says she attempted to raise a window. The position in which she was standing, at the time she made the effort, was one in which both knees were abducted and slightly flexed, the thigh was flexed on the pelvis and the knees were pressing against the wall beneath the window. In this position, which was such that she could exert great traction or great force, she then attempted to raise the window by pulling directly upward on the lower sash. She said that at the acme of greatest exertion that she felt a sudden sharp pain in the right side and that immediately she noticed that she could not breathe well because of pain in the lower right iliac region.

At the time of examination she was unable to take a deep breath, without severe pain in the right side. She also could not cough without having severe pain in the same region.

The presence of pain, of course, suggested appendicitis. However, the absence of vomiting would show that the alimentary viscera were not involved in the pathology causing the pain; also, the bowels were normal, the patient being neither constipated nor suffering from diarrhea. The pain was not present when she was absolutely quiet, which was another indication of the absence of acute inflammatory pathology in the abdominal cavity. There was not much rigidity on pressure over the area of the appendix, but there was considerable rigidity on making pressure lower down over the insertion of the right rectus abdominis, although the rigidity was not as marked as one would find in appendicitis. At this point, which was near to Poupart's, she complained of severe pain.

The next factor which entered into our differential diagnosis was inguinal hernia. This was excluded by the absence of a bulging at the site of the pain; also by the inguinal ring being closed. In the femoral region there could not be felt any apparent opening nor bulging on the patient coughing or straining. There was no fever, nor increase of the pulse rate. The patient felt well, except for the pain which she had in the right side.

This patient had been to two other hospitals, where the diagnosis had been made of acute appendicitis. However, even though a blood count was not made by us, appendicitis was excluded and the diagnosis of a laceration and rupture of the rectus muscle was made.

Operation proved that the diagnosis was correct. The presence of extravasated blood, in such a degree of organization that it formed a rather firm film over the peritoneum, between it and the rectus, and the presence of the lacerated and torn fibres of muscular tissue of the rectus muscle, indicated that the correct diagnosis was rupture of the rectus muscle.

The absence after operation of all pain, the ability of the patient to take deep breaths, and also to cough without pain indicated that the pathology from which the patient had been suffering prior to operation had been corrected at the operation.

The tear of the rectus fibres had apparently taken place near to their insertion into the aponeurosis. The muscle itself was very friable.

The pathological report is as follows:

Patient, Mrs. H. S. Symptoms suggestive are rupture of rectus abdominis; possibly (?) appendicitis. Examination requested, pathological.

December 22, 1919:

Macroscopical. Small fragments of muscle, one-half inch square, one-sixth inch thick. Has two spots of hemorrhage, otherwise muscle appears normal. Appendix 3 inches long, 1/4 inch wide, slightly narrow at its proximal end Peritoneum smooth, not injected; mucosa appears normal; contains blood-stained contents.

Microscopical. Mucosa of appendix shows thickening and the sub-mucosa is markedly infiltrated with lymphocytes and lymph nodes, indicating low grade catarrhal process. The other coats are normal. The muscles show considerable degeneration. suggesting a degenerative process antedating the rupture. The fibres show an exaggerated fibrillation and some are in a marked granular state, and a few of the fibres are broken down to hardly recognizable fibrillary masses; occasionally, hyaline. There are several areas of fibrous tissue reaction and cell infiltration. Recent blood is extravasated between the fibres. Some fibres are curled up, suggesting contraction after the break.

Diagnosis. Chronic myositis—degeneration. Catarrhal (chronic) appendicitis.

J. Rockman, *Pathologist.*

The pathological examination of the appendix shows no change suggestive of an acute inflammatory process, so that the appendix may be excluded as the cause of the pain felt by the patient. The muscle, however, is the seat of a pathological reaction that will tend to weaken it. As to the cause of this change (myositis) I am unable to venture an hypothesis.

A rupture of the rectus abdominis muscle is usually regarded as a very rare accident, though it was found by Beals, Blanton and Eisendrath in eight cases out of 140 of bronchial pneumonia, which had come to autopsy. This rupture occurred between the symphysis pubis and the umbilicus. It was never complete, usually involved only a few fibres and was always unilateral. It was accompanied by hemorrhage under the sheath of the muscle. They explain this occurrence from the fact that there was some localization of infection in these muscles, or abscess formation and consequent rupture on violent coughing. (Beals, Blanton and Eisendrath, "Abdominal Complications of Pneumonia at Camp Custer," *J. A. M. A.*, 1919, 72-850.)

Book Reviews.

Health and the Woman Movement. By Clelia Duel Mosher, A.M., M.D. Second Revised Edition. New York: The Woman's Press. 1918.

The unprecedented demands which the war has made of women have proven their ability to take the places of men in numerous activities in spite of differences of sex. The author of *Health and the Woman Movement* maintains that the majority of women can be trained to meet their increased economic responsibilities as well as their racial duties with a normal mental condition and functional activity. In dealing with more than 1900 women for over twenty-five years, Dr. Mosher has found that constrictive clothing and inactivity of the muscles of the abdomen and diaphragm are among the most important factors in causing disability: for improving the latter condition, exercises are suggested in this book. The author emphasizes particularly the importance to women of thinking in terms of health instead of illness, and states the value of useful labor in altering morbid mental attitudes.

It is true that women have proven themselves physically able to withstand the hardships of labor in spite of their physiologic structure; the author of this book fails, however, to point out that it is as yet too soon to determine whether or not—even if they have succeeded under the stress of abnormal circumstances in overcoming their periodic incapacity—the subjection of women to many forms of labor will have a beneficial or a detrimental effect upon the future generation.

Hospital Accounting and Statistics. Fourth Edition. Compiled by William V. S. Thorne. New York: E. P. Dutton & Co. 1918.

The object of this book is to assist hospitals by a system of accounting which will show in a uniform manner, especially for purposes of comparison, statements of receipts and expenses. This method of bookkeeping has now been adopted as standard by many hospitals throughout the United States and Canada. Such information as is of immediate importance to the hospital managers, trustees, and to the public, from whose contributions a great many institutions derive funds, is readily available as a result of the adoption of a simple, intelligent system. Complete descriptions and specimen pages from Superintendent's Bill Book, Bill Register, Patient's Ledger Account Cards, and Cash Receipt Book, as well as specimen report sheets, are contained in this book. As a practical working guide, compiled as a result of numerous conferences between the superintendents and treasurers of Accounts of some of the larger hospitals, the book should prove helpful in minimizing clerical labor and making more accurate hospital accounts and records.

A Manual of Physiology. With Practical Exercises. By G. N. Stewart, M.A., D.Sc., M.D., Edin.; D.P.H., Camb. With Colored Plate and 492 Other Illustrations. New York: William Wood and Company. 1918. Eighth Edition.

The eighth edition of this standard text is distinguished by most creditable revision, in accord with the advances in physiology which have been made in these last unsettled years. Professor Stewart's constant activity as an investigator is reflected in his thorough treatment of recent literature upon the physiology of the ductless glands, respiration and urine formation. It is always pleasant to find a text which treats advancing subjects suggestively, a feature consistently true in this case.

The inclusion of practical exercises, as in former editions, rather detracts than adds to the final value of the work. The reader taking up such a book for reference is simply annoyed by these inclusions and the teacher invariably specializes his own laboratory course in such a way as to render such exercises of little use.

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The Journal does not hold itself responsible for any opinions or sentiments advanced by any contributor in any article published in its columns.

All letters containing business communications, or referring to the publication, subscription or advertising department of the Journal should be addressed to

BOSTON MEDICAL AND SURGICAL JOURNAL
126 Massachusetts Ave., Cor. Boylston St., Boston 17, Massachusetts

MEDICAL LEGISLATION.

THE Legislature of 1920 has adjourned to meet in special session in November. No constructive legislation on any medical matter of major importance has been enacted. Internes and medical officers in hospitals have been granted the right of limited registration. Prisoners suffering from venereal diseases or tuberculosis may be detained until they cease to be a menace to the public health. All other measures favored by the medical profession as represented by the Joint Committee on Legislation of the Massachusetts Medical Society and Massachusetts Homeopathic Medical Society have failed of passage.

Action upon one very important matter has been deferred to the special session in November. The entire question of maternity aid has been referred to a commission of five, including the Commissioner of Health, the Commissioner of Public Welfare, one physician and one woman. This commission must report its recommendations to the Legislature in November.

The JOURNAL has already discussed the various measures proposed. It plans to publish additional articles upon this very important subject.

Several district and other medical societies have passed resolutions against any legislation at all looking to maternity aid. If all legislation is to be defeated the Governor and a very large proportion of our Senators and Representatives must be converted from their present views. Opposition on the ground that such legislation is socialistic is not enough. It must be shown that such legislation will not benefit obstetrics, and this in the face of a conviction among many of those physicians who are best informed that some of the proposed steps will aid the art of obstetrics. There is further a widespread belief that obstetric practice, whether by physicians or by midwives, is not in many places up to a reasonably high standard. If legislation is to be defeated those opposing it must show better ways of improving practice and must take active steps toward reform, for improvement should come in one way or another. Frank discussion will help to a wise decision, and this the JOURNAL urges. The medical profession can exert its influence now. We are concerned with securing the best possible care for both mother and child. We are concerned with maintaining the highest standards for our state and local departments of health. We do not wish our State Department of Health to become in any sense a dispenser of poor relief as some of the proposed maternity aids would make it. It must be maintained to deal with health measures alone.

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SIR WILLIAM OSLER AS A MAN OF LETTERS.

IT may not be appreciated generally that Sir William Osler, honored by three countries for his scientific achievement, was also a man of letters. His interests in literature were broad and varied, and because of his literary distinction and ability he was elected to the Presidency of the Classical Association of Great Britain. In a review of one of Osler's works, "The Old Humanities and the New Science," Mr. Brander Mathews has made interesting comments upon the literary attainments of Dr. Osler. Although known primarily as a man of science, he was as familiar with the pen as with the clinical thermometer; he was as well informed about books as he was about bones. In the words of Professor Gilbert Murray, who preceded him as President of the Classical Association, Osler "represents in a peculiar way the learned physician who was one of the marked characters of the seventeenth and eighteenth centuries, and stands for a type of culture which the Classical Association does not wish to see die out of the world—the culture of a man who, while devoting himself to his special science, keeps, nevertheless, a broad basis of interest in letters of all kinds."

Sir William Osler proved not only by his appreciation of literature but also by his own writings that he recognized the full value of Humane Letters. Speaking of the Humanities, Dr. Osler remarked in his presidential address at Oxford that "one of the marvels so commonplace that it has ceased to be marvelous, is the deep rooting of our civilization in the soil of Greece and Rome—much of our dogmatic religion, practically all the philosophies, the models of our literature, the ideals of our democratic freedom, the fine and the technical arts, the fundamentals of science and the basis of our law. The Humanities bring the student into contact with the master minds who gave us these things—with the dead who never die, with those immortal lives 'not of now nor of yesterday, but which always were.' "

Dr. Osler believed that although the study of the ancient languages is valuable as mental discipline, it should also be borne in mind that its chief purpose is to unlock the wealth of ancient literatures. He deeply regretted that although students devote years to the study of Greek and Latin, at the end of that time the purities of the languages are still hidden because of the methods by which they are taught. Osler asserts that the salvation of science lies in "a recognition of a new philosophy"—foretold by Plato when he said, "All these studies reach the point of intercommunication and connection with one another and come to be considered in their mutual affinities; then, I think, and not till then, will the pursuit of them have a value." In pleading for a recognition at Oxford of the solidarity of the science of the present with the science of the past, Dr. Osler urged that "the scientific student should go to the sources and in some way be taught the connection of Democritus with Dalton, of Archimedes with Kelvin, of Aristarchus with Newton, of Galen with John Hunter, and of Plato and Aristotle with them all."

Since the middle of the nineteenth century Science has been forging ahead and battling for a place by the side of the Humanities. In Sir William Osler these two forces found a happy reconciliation, each supplementing the other and uniting to find satisfaction in the achievement of a learned physician who was both a scientist and a man of letters.

TUBERCULOSIS IN CHILDHOOD.

The proper treatment of tuberculous infection in childhood is becoming recognized as one of the most important means of preventing the development of tuberculosis in adult life. In an article in a recent issue of *The Commonhealth*, Dr. H. D. Chadwick, Superintendent of the Westfield Sanatorium, has considered the problem of tuberculosis in childhood, emphasizing the difference between early infection and disease, and outlining the symptoms and effective methods of treatment.

Tuberculosis is one of the common diseases of childhood, too often neglected and allowed to remain as a focus for later pulmonary development. In infancy the infection is a generalized disease; in childhood it appears in glandular form; and adult tuberculosis develops as a later stage of the glandular and peribronchial disease in children. During various age periods the body reacts differently to the infection: an infant infected with tubercle bacilli develops general miliary disease; older children acquire the power of reacting to infection, with a result that localization of the bacillus occurs, most often in the lymphatic glands, or more rarely in the bones. Resistance to further pathological development depends on many things, among which unhealthy living conditions in the home and school, subjecting the child to other diseases and lowered vitality, is one of the most important and yet a preventable factor.

Before children reach the age of sixteen years, nearly all of them have become potentially tuberculous by the entrance into their bodies of tubercle bacilli, which in the majority of instances remain latent through life unless the infection is awakened into activity either by environmental conditions or some intercurrent disease. When symptoms begin to appear, children should be observed carefully as they are less apt to complain than are adults and their first symptoms are chiefly subjective. In any case where there is no complete diagnosis, tuberculosis should be considered either as the primary cause of other symptoms or as a smouldering secondary condition. Children who have been exposed for a prolonged period to an active case of pulmonary tuberculosis will almost certainly become infected; they will develop symptoms of tuberculosis later if they are poorly nourished or become debilitated by some other disease. The symptoms vary with the location of the tubercle and with the amount of local reaction set up by the presence of bacilli. In nearly all children the infection at first is localized in the bronchial glands and about the root of the lung. If the disease develops the child becomes listless and unduly fatigued, has little appetite, and usually develops in the late afternoon a temperature one-half to one degree above normal; he will often appear irritable and dull, and will fail to develop normally in height and weight. A cough may begin when enough peribronchial irritation develops, either from inflammation or pressure, and vague transitory pains in the legs and body may be complained of. The symptoms of childhood tuberculosis in the early stage are those of toxemia resulting from tuberculous absorption; there may be no cough, and symptoms indicating the focus of the disease may be absent. The symptoms of fever and fatigue depend to a great extent upon the activity of the child. Greater importance should be attached to symptoms than to physical signs. Weakness is the most constant of the warning symptoms.

It has been found that children having symptoms of active tuberculosis respond to sanatorium treatment if they are reached before the tubercle has broken down and the lesion has become an open one. In advanced cases where the sputum is positive, the prognosis is not as good as in adults at a corresponding stage of the disease, even when the best conditions for treatment are available. Tuberculous children need frequent rest intervals, with short periods of study and play and frequent change of activity and rest. Fresh air is essential; but too much cold air, taking away too much bodily heat, may only further depress a patient and enfeeble his resistance.

It should be remembered that tubercle bacilli are omnipresent and that all children are susceptible to infection. Although nearly all become infected, only a small percentage develop the symptoms of disease during childhood. The pulmonary disease of adults, however, is generally due to the lighting up of the tuberculous focus which has been quiescent since childhood. How important it is, then, in preventing the development of pulmonary tuberculosis in an adult, to treat that individual when the infection first appears in childhood, doing everything possible to increase resistance and to create a reserve at an early age by improving personal hygiene and home conditions. Although it is probable that childhood infection makes more difficult additional infection from without in later life, an adult whose vitality is lowered is in constant danger from the infection which he has carried in his tissues since early life. Although little can be done in preventing infection, improved conditions in the homes and schools will accomplish a great deal in preventing the child from becoming diseased. Resistance built up in childhood will be of benefit to the adult.

THE DEVELOPMENT OF NURSING DURING THE PAST CENTURY.

The observance of the one hundredth anniversary of the birth of Florence Nightingale is an appropriate time to review the development during the past century of the nursing service, to which she gave her inspiration and her life. As long as suffering has existed among men, the nurse, at first untrained and unskilled, has endeavored to alleviate it. It was probably in the Middle Ages, however, especially among the religious orders, that nursing first began on an organized basis. During modern times, probably within the last forty years, there has come into prominence one of the most important branches of nursing, public health nursing. In an article written by the medical correspondent to a Boston paper, the development of this work in Boston has been outlined.

The public health nurse was probably of English origin; it is known, at least, that such work was begun in the early seventies in Liverpool, where a woman was definitely employed to care for the poor in their homes. This work was observed by several Boston women, who became interested in it and began similar undertakings in Boston. In connection with the day nurseries in the city, efforts were made to educate mothers in the elements of sanitation. The Women's Educational Association then became interested in the project, and in 1886 tried the experiment of sending out two nurses. In 1889 it was found that the services of twelve nurses could be used to advantage, one to work with the physician detailed for service in each of the twelve districts into which the city has been divided by the Boston Dispensary. Even before 1899 some attempt was made with follow-up work, although in a very limited way; one nurse, for instance, was detailed to oversee the children discharged from the Children's Hospital.

In 1901 a special nurse was engaged to take care of tuberculosis work; she visited the homes of tuberculous out-patients of various institutions and endeavored to instruct them in matters of health and hygiene. When it was felt in 1906 that nurses were needed in the public schools, the Boston Instructive District Nursing Association undertook the experiment, supplying five paid nurses and an equal number of volunteer assistants. Cases of infectious disease were soon put under the charge of nurses; then followed obstetrical nursing and other specialties,—eyes, throat, and industrial cases,—and the recent advent of the community nurse. These public nurses have studied conditions in the homes, they have given instruction in the avoidance of communicable disease, and have gathered for medical authorities statistical data of far reaching significance. Proper medical and surgical treatment, with financial assistance if necessary, has been made available to needy patients.

The work of the public nurse has developed to such an extent that from the one little society in Boston and another in New York there have been organized at least twenty-eight hundred local organizations with nurses of their own and three or four hundred others contributing and having part-time service. There are in the country at the present time nearly ten thousand nurses representing thirteen hundred cities, every one of the forty-eight states of the Union, and all the territorial possessions. It is with a feeling of deep appreciation of the devoted and unselfish work of Florence Nightingale that we trace the development of the nursing service from its early beginnings to its present position as an indispensable agency in the protection and maintenance of public health.

* * *

TRANSMISSION OF TUBERCULOSIS.

Some time since in a discussion as to why many men who are communicants do not come to communion, it was stated by one man that he would never communicate as long as there was a common cup in use. As there was a difference of opinion as to the danger of a common cup I took upon myself to look the matter up, using the disease syphilis as an index, that being probably the most common disease, and at the same time one that is most likely to be transmitted through the use of a common cup.

The leading authority in this country on the transmission of syphilis is probably Colonel E. B. Veeder of the United States Army. Several years ago he made a very careful study of the subject, having at his disposal the wealth of literature collected in the Library of the Surgeon General's Office of the War Department. From this study[1] he says that extra genital syphilitic infections are between 5 and 10 per cent. of all the cases, and that there have been 20,000 such cases in recent literature. (*Syphilis and Public Health*, p. 149.) His analysis of extragenital chancres shows that 27.44% were of the lip (p. 151). That of the chancres of the. lip, 13.24% were acquired by kissing, and that 8.1% were traced to drinking glasses (153).

Some of the clergy wipe the lip of the cup with a napkin each time it is used. This shows a desire to do the right thing and also a lack of knowledge of the subject of bacteriology. Everyone knows that wiping with a damp cloth is a poor way to sterilize instruments, and no surgeon who performed an operation without other precautions would escape a malpractice suit. Zinsser and Hopkins have shown that the organism which causes syphilis will live on a moist towel for 11½ hours (Rosenau, *Preventive Medicine and Hygiene*, 2 ed., p. 57). This being true, it will be seen that should a syphilitic use the cup amongst the first of the communicants the wiping process would only diffuse the infection.

It has been said that the alcohol in the wine would kill the germs which cause disease. The bacteriologist of the New Haven Department of Health has this to say on the subject: "A number of people have the idea that whiskey and beer and other alcoholic drinks kill any bacteria which may be on the glasses in which they are served. We tried experiments with whiskey and beer, and find that alcoholic drinks do not kill bacteria and that glasses used for such drinks should be as carefully washed as any other glasses (*Mo. Bull.*, New Haven Department Health, May, 1919).

The amount of alcohol in the communion wine is very much less than in whiskey, therefore there can be no bactericidal power in the wine. It is also to be observed that the wine does not come in contact with all portions of the lip of the cup. It therefore is apparent that the danger from the common cup is not lessened by the alcohol in the wine.

A considerable number of the communicable diseases are transmitted through the excretions from the throat and nose. In this class we find cerebro-spinal meningitis, infantile paralysis, measles, scarlet fever, diphtheria, pneumonia, and coughs and colds, under which head comes influenza and tuberculosis. In one of the large camps in 1918, during the epidemic of influenza, it was clearly demonstrated that the disease was spread through the imperfectly washed dishes. When all the dishes were sterilized the epidemic subsided. The health officer of Florida made a study of the glasses used in the soda fountains and found that, when diphtheria prevailed in Jacksonville, cultures from 20% of the glasses showed the diphtheria bacillus.

On July 4, 1915, there was a wreck on the Lehigh Valley Railroad and a large number of persons from the surrounding farms went to view the ruins. Amongst them was a boy who had visited in a distant city. He was hot and feverish and thirsty, so went to a nearby farm and procured a pail and dipper. During the afternoon he drank freely from the dipper as did many other children. On the following day he came down with measles and within a week 18 of those who had been at the wreck were down with the disease. All of them had used the dipper and there was no other source of infection in that part of the county. After a careful study of the cases it was concluded that the dipper was the means of transmission from the boy who was feeling badly on July 4 and the other cases of the disease.

The recent experiments of Brown and his associates at Saranac Lake show that there is a real danger of transmission of tuberculosis by means of kissing and the same observers were able to infect guinea pigs from the washings from cups used by persons with tuberculosis (*American Review of Tuberculosis*, III, p. 623).

The individual communion cup is a relic of ignorance and a progressive church will adapt itself to the needs of modern civilization by adopting a more sanitary way of administering the wine. I. W. Brewer.

* * *

A CORRECTION.

We regret that in an editorial entitled "The One Hundredth Anniversary of the Birthday of Florence Nightingale," published in the issue of the Journal for June 3, 1920, we unwittingly did an injustice to a Massachusetts institution in stating that the first training school in this country was established approximately fifty years ago in Bellevue Hospital, New York. The New England Hospital for Women and Children was chartered in 1864 to treat the sick and teach nurses. In 1872 Dr. Susan Dimock started a training school at the New England Hospital, from which Miss Linda Richards was the first to graduate, in 1873. In May, 1873, the Bellevue School began, but gave no regular instruction until 1874. Miss Richards, after graduating from the New England Hospital, went as night superintendent to the Bellevue Hospital. To the New England Hospital for Women and Children, therefore, and not to the Bellevue Hospital of New York, belongs the credit of establishing the first training school for nurses in America.

MEDICAL NOTES.

Bubonic Plague in Vera Cruz.—Because of the bubonic plague in Vera Cruz, the citizens have decided to burn one-third of the houses in that city. A dispatch from Vera Cruz has announced that state authorities have accepted the offer of the United States Government to send a sanitary detachment and supplies to that city for the purpose of combating the spread of the disease.

Construction of Hospitals for War Veterans.—A bill reported recently by the House Buildings Committee has authorized the construction of five hospitals, costing ten million dollars, for the use of veterans of the World War. One is to be located in the region of the Central Atlantic Coast States, one on the Great Lakes, one in the North Pacific Coast States, one in Rocky Mountain States, and one in Southern California.

Congress of Physiology in Paris.—A Congress of Physiology is to be held in Paris from the sixteenth to the twentieth of July, 1920, under the presidency of Professor Charles Richet. An exhibition of apparatus and instruments will be associated with the Congress. Physiologists of allied neutral countries are invited to participate in the Congress. Membership and dues, thirty-five francs, should be sent as soon as possible to the treasurer, Monsieur Lucien Bull, Secretary of the Congress, Sorbonne, 1 Rue Victor Cousin, Paris, V^{e}.

Paris Congress of Physiology.—The Paris Congress of Physiology will hold its sessions this year from July 16 to July 20, under the presidency of Professor Charles Richet. The last congress was held in September, 1913, at Groningen.

Election of American Physicians to the Société de Pathologie Exotique.—The following physicians from the United States have been elected as members of the Société de Pathologie Exotique: Dr. S. Flexner, Rockefeller Institute, associate member, already corresponding member; Dr. B. H. Ransom, United States Bureau of Animal Industry, corresponding member.

The Massachusetts Medical Society.

ANNUAL MEETING OF THE COUNCIL, JUNE 8, 1920.

The annual meeting of the Council was held at the Boston Medical Library, 8 The Fenway, Boston, Tuesday, June 8, 1920, at twelve o'clock noon. The President, Dr. Alfred Worcester, was in the chair and the following 130 Councilors were present:

- Barnstable,
  - W. D. Kinney.
- Berkshire,
  - A. P. Merrill, V.-P.
  - Henry Colt.
  - B. W. Paddock.
  - P. J. Sullivan.
- Bristol North,
  - W. H. Allen,
  - A. R. Crandell, Vice-Pres.
  - W. O. Hewitt.
  - F. A. Hubbard, M.N.C.
- Bristol South,
  - E. F. Cody.
  - W. A. Dolan.
  - R. W. Jackson.
- Essex North,
  - R. V. Baketel.
  - J. F. Burnham.
  - T. R. Healy.
  - G. E. Kurth.
  - F. B. Pierce.
  - F. E. Sweetsir.
- Essex South,
  - W. G. Phippen, V.-P.
  - H. K. Foster.
  - W. T. Hopkins, M.N.C.
  - J. F. Jordan.
  - R. E. Stone.
- Franklin,
  - G. P. Twitchell, M.N.C.
  - C. L. Upton.
- Hampden,
  - J. M. Birnie, V.-P.
  - F. H. Allen.
  - E. P. Bagg, Jr.
  - A. C. Eastman.
  - Philip Kilroy, M.N.C.
  - G. L. Schadt.
- Hampshire,
  - J. G. Hanson.
  - C. E. Perry.
- Middlesex North,
  - W. B. Jackson.
  - J. H. Lambert.
  - J. A. Mehan.
  - J. H. Nichols, M.N.C.
- Middlesex South.
  - H. T. Baldwin, V.-P.
  - A. W. Dudley.
  - F. R. Jouett.
  - E. H. Stevens, M.N.C.
  - John Duff.
  - Godfrey Ryder.
  - C. H. Staples.
  - C. E. Mongan.
  - W. D. Ruston.
  - Richard Collins.
  - C. A. Dennett.
  - W. E. Fernald.
  - Alfred Worcester, Pres.
  - F. G. Curtis.
- Middlesex South (*cont.*),
  - H. S. Rowen.
  - F. R. Stubbs.
  - C. E. Hills.
  - E. H. Bigelow, C.
  - A. K. Stone, Treas.
  - Fresenius Van Nüys.
- Norfolk,
  - G. W. Winchester, V.-P.
  - C. E. Allard.
  - W. B. Batchelder.
  - D. N. Blakely.
  - E. H. Brigham, Lib.
  - A. N. Bronghton, M.N.C.
  - W. L. Burrage, Sec.
  - R. W. Hastings.
  - H. T. Holland.
  - G. W. Kaan.
  - W. B. Keeler.
  - Bradford Kent.
  - A. P. Perry.
  - M. V. Pierce.
  - H. H. Powers.
  - Victor Safford.
  - G. H. Scott.
  - Augusta G. Williams.
- Norfolk South.
  - E. H. Bushnell, V.-P.
  - C. S. Adams.
  - J. H. Libby.
  - G. H. Ryder, M.N.C.
- Plymouth.
  - F. J. Ripley.
  - F. G. Wheatley, M.N.C.
- Suffolk,
  - F. B. Lund, V.-P.
  - J. L. Ames.
  - J. W. Bartol, C.
  - Robert Bonney.
  - J. T. Bottomley.
  - J. E. Briggs.
  - F. J. Cotton.
  - Loretta J. Cummins.
  - Lincoln Davis.
  - Channing Frothingham, C.
  - W. J. Gallivan.
  - C. M. Green, C.
  - J. E. Goldthwait.
  - G. S. Hill.
  - W. C. Howe, M.N.C.
  - F. L. Jack.
  - D. F. Jones.
  - F. T. Lord.
  - R. H. Miller, C.
  - J. J. Minot.
  - W. H. Robey, Jr.
  - Stephen Rushmore.
  - D. D. Scannell.
  - C. L. Scudder.
  - C. M. Smith.
  - Myles Standish.
  - J. S. Stone.

SUFFOLK (*continued*),
Louisa P. Tingley.
F. H. Williams.
WORCESTER,
F. H. Baker, V.-P.
W. P. Bowers, Ex-P.
W. J. Delahanty.
G. E. Emery.
M. F. Fallon.
Homer Gage.
J. O. Généreux.
R. W. Greene.
David Harrower, M.N.C.

WORCESTER (*continued*),
E. L. Hunt.
A. G. Hurd.
W. L. Johnson.
C. B. Stevens.
G. O. Ward.
F. H. Washburn.
S. B. Woodward, Ex-P.
WORCESTER NORTH,
W. E. Currier.
E. L. Fiske, M.N.C
J. G. Henry.
W. F. Sawyer.

On motion, duly seconded, the reading of the minutes of the last meeting, as published in the Proceedings of the Council, was omitted by vote.

The Secretary read the names of the Nominating Committee by districts, and the committee retired, the following being present:

BARNSTABLE,
W. D. Kinney.
BERKSHIRE,
P. J. Sullivan.
BRISTOL NORTH,
F. A. Hubbard.
BRISTOL SOUTH,
R. W. Jackson.
ESSEX NORTH,
R. V. Baketel.
ESSEX SOUTH,
W. T. Hopkins.
FRANKLIN,
G. P. Twitchell.
HAMPDEN,
Philip Kilroy.
HAMPSHIRE,
D. M. Ryan.

MIDDLESEX NORTH,
J. H. Nichols.
MIDDLESEX SOUTH,
E. H. Stevens.
NORFOLK,
A. N. Broughton.
NORFOLK SOUTH,
G. H. Ryder.
PLYMOUTH,
F. G. Wheatley.
SUFFOLK,
W. C. Howe.
WORCESTER,
David Harrower.
WORCESTER NORTH,
E. L. Fiske.

Dr. Charles M. Green presented the following report for the Committee on Membership and Finance, as to membership, and it was accepted and its recommendations adopted:

REPORT OF COMMITTEE ON MEMBERSHIP AND FINANCE AS TO MEMBERSHIP.

The Committee on Membership and Finance makes the following recommendations as to membership:

1. That the following named Fellows be allowed to retire, under the provisions of Chapter I, Section 5, of the By-Laws:

Cummings, Edwin Francis, of Revere, as of December 31, 1920.

Flood, Everett, of Palmer, as of December 31, 1920.

Hunt, William Otis, of Newtonville, as of December 31, 1920.

Morris, John Gavin, of South Boston, as of December 31, 1920.

Sawyer, Elihu Le Roy, of Roslindale, as of December 31, 1920.

Stedman, George, of Boston, as of December 31, 1920.

Thompson, Frederick Henry, of Fitchburg, as of December 31, 1920.

Walton, George Lincoln, of Boston, as of December 31, 1920.

Whittier, Francis Fremont, of Brookline, with remission of dues for 1918 and 1919.

Wilbur, Sarah Mann, of Springfield, as of December 31, 1920.

Williams, Charles Crosby, of Los Angeles, California, as of December 31, 1920.

2. That the following named Fellows be allowed to resign, under the provisions of Chapter I, Section 7, of the By-Laws:

Allen, Clarence Jean, of Lynn, as of December 31, 1919.

Dole, Kenneth Llewellyn, of Redlands, California, as of December 31, 1919.

Forhan, Neil Kittredge, of North Billerica, as of December 31, 1919.

Hedin, Carl Johan, of Bangor, Maine, as of December 31, 1919.

MacKay, William Henry, 1935 Wallace Street, Philadelphia, as of December 31, 1919.

Noyes, Arthur Percy, of Roxbury, as of December 31, 1920,

Rowland, Edward Gould, of Natick, as of December 31, 1919.

Russell, Edward Ervin, of North Adams, as of December 31, 1919.

Smith, Lillian Richardson, of Worcester, as of December 31, 1919.

Underhill, Samuel Graham, of Los Angeles, California, as of December 31, 1919.

Watt, George, of 141 West 109th Street, New York, as of December 31, 1919.

Whitcher, Burr Royce, 101 West 73rd Street, New York, as of December 31, 1919.

Woodward, Johnson Rufus, of Oxford, as of December 31, 1919.

3. That the dues of the following named Fellows for 1920 be remitted, under the provisions of Chapter I, Section 6, of the By-Laws.

De Langle, Charles Petit, of St. Helena, California.

Withington, Alfreda Bosworth, of Pittsfield, still on War Service in France.

4. That the following named Fellows be allowed to change their district membership, without change of legal residence, under the provisions of Chapter III, Section 3, of the By Laws:

Cheever, Austin Walter, from Middlesex South to Suffolk.

Daland, Ernest Merrill, from Middlesex South to Suffolk.

Howland, Joseph Briggs, from Norfolk to Suffolk.

Janney, James Craik, from Middlesex South to Suffolk.

Payne, James Henry, U.S.N., from Middlesex South to Suffolk.

Roderick, Charles Elvin, from Bristol North to Norfolk.

Sowles, Horace Kennedy, from Norfolk to Suffolk.

Spear, Louis Mahlon, from Norfolk to Suffolk.

Townsend, Charles Wendell, from Essex South to Suffolk.

White, Paul Dudley, from Norfolk to Suffolk.

For the Committee on Membership and Finance,
CHARLES M. GREEN, *Chairman.*

Dr. Green then presented a report of the same committee, on finance, referring to the approach of the October meeting of the Council, when an affiliation with the BOSTON MEDICAL AND SURGICAL JOURNAL would come up for renewal, and to Chapter IV, Section 8, of the By-Laws, which requires a request for an extraordinary appropriation to be submitted to the Committee on Membership and Finance before action by the Council.

Report of Committee on Membership and Finance as to Finance.

The Committee on Membership and Finance, in view of the fact that it will be necessary to take action, at the October meeting of the Council, with reference to the affiliation with the Boston Medical and Surgical Journal, thinks it wise to submit at this meeting the following three possible courses of action in October, in order that Councilors may be prepared to represent the wishes of their respective District Societies:

I. To discontinue the affiliation with the Boston Medical and Surgical Journal, in full knowledge of the fact that the oldest weekly medical journal on this continent, and the second oldest in the world, would in that event probably be obliged to suspend publication.

II. To take over the ownership and financial responsibility of the Journal.

III. To contract with the present owners of the Journal to pay for the year 1921 the cost price of publication—$4.50 a year.

If Plan I is rejected, and either Plan II or Plan III be adopted, in October, the Committee on Membership and Finance would recommend that the annual dues for 1921 be placed at $10—with a view to providing

(*a*) For the additional cost of $1.50 for the Journal for each member in good standing;

(*b*) For the increased cost of maintaining the Society's new and increasing activities;

(*c*) For affording a sufficient income to warrant a dividend to the District Societies, which will make it unnecessary for the Districts to levy and attempt to collect a special assessment to provide for their meetings.

For the Committee on Membership and Finance,
Charles M. Green, *Chairman.*

The report was accepted. On motion by Dr. Bowers, duly seconded, and discussed by Dr. Green, Dr. Mehan, Dr. Mahoney, Dr. Bartol, Dr. F. B. Pierce, and Dr. Cody, it was voted that the annual dues for the year 1921 be fixed at $10.

Dr. Bowers took the floor and discussed the relation of the Society to the Boston Medical and Surgical Journal and read the following preamble and motion:

Whereas: It is believed that The Massachusetts Medical Society should own an official organ for the purpose of publishing its transactions and promoting interchange of opinions and the maintenance of medical literature, it is hereby

Moved: That a committee of nine members of this Society be elected with full powers to represent and act for The Massachusetts Medical Society, for the purpose of entering into negotiations with the owners of the Boston Medical and Surgical Journal for the purchase of the said Journal if the terms and conditions which may be submitted by the said owners meet the approval of this committee.

And, further, if the purchase of the said Journal shall be consummated that this committee be and hereby is authorized and empowered to employ agents, make contracts and all other arrangements which may be deemed necessary by said committee in maintaining a medical journal.

The election of this said committee is hereby provided for as follows: Upon nomination by the President, three members of the Society shall be elected to serve for one year, three for two years and three for three years, and at each annual meeting of the Council, there shall be elected three who shall serve for three years.

This committee shall submit a report of its doings at the annual meeting of the Council. Any vacancy in this committee may be filled at any meeting of the Council.

The motion was seconded by Dr. Lund, discussed by Dr. Cody, Dr. Green, Dr. Woodward, Dr. Dolan, and Dr. Bowers, re-read by the Secretary by request of the Chairman, and passed unanimously.

The President nominated and the Council appointed by vote this committee of nine to carry out the terms of the vote:

For three years: Homer Gage, *Chairman*, E. W. Taylor, E. C. Streeter.

For two years: R. B. Osgood, W. H. Robey, R. I. Lee.

For one year: Channing Frothingham, H. D. Arnold, J. S. Stone.

On motion by Dr. Bowers, it was *Voted:* That if the committee of nine members finds it necessary to expend money that this committee be directed to confer with the Committee on Membership and Finance and that a report be made by the Committee on Membership and Finance at the October meeting of the Council as to such funds which shall meet the recommendations of the committee of nine.

On motion by Dr. Mongan it was *Voted:* That in the event that the Boston Medical and Surgical Journal is taken over by The Massachusetts Medical Society, the money now appropriated for payment to the Journal be placed at the disposal of the said committee of nine members just appointed.

The committees appointed to consider the petitions of N. M. Crofts, C. H. Keene, W. G. Stickney and T. L. Jenkins for restoration to the privileges of fellowship reported, favoring their restoration under the conditions specified in each report. The committees' reports were accepted severally by the Council and their recommendations adopted.

The following petitions for restoration to the privileges of fellowship were received and committees appointed to consider them as in this list:

J. D. Lucas; Committee, C. D. Knowlton, G. H. Scott, F. W. Stetson.

F. B. Colby; Committee, E. A. Sawyer, A. F. Lowell, George Mossman.

J. T. Cahill; Committee, G. S. Allen, J. J. O'Sullivan, V. A. Reed.

T. B. Foley; Committee, Augustus Riley, F. H. Lahey, H. H. Howard.

A. J. Choate; Committee, S. W. Mooring, S. P. F. Cook, J. J. Egan.

J. R. Hobbie; Committee, O. J. Brown, J. F. Crowley, F. D. Stafford.

Mary P. Dole; Committee, J. G. Hanson, W. J. Collins, J. E. Hayes.

The Nominating Committee brought in the following nominations for officers and orator for the year 1920-1921: President, Alfred Worcester, Waltham; Vice-President, Frederick Ellis Jones, Quincy; Secretary, Walter L. Burrage, Jamaica Plain; Treasurer, Arthur K. Stone, Framingham Center; Librarian, Edwin H. Brigham, Brookline; Orator, Francis W. Anthony, Haverhill. Proceeding to ballot, eighty-two ballots were cast, all for the ticket as brought in, and the officers and orator were declared elected.

The President nominated and the Council appointed these Standing Committees for the year 1920-1921:

Standing Committees for 1920-1921.

ARRANGEMENTS.

C. H. Lawrence, Jr., *Chairman*, Donald Macomber, A. W. Reggio, J. B. Swift, K. G. Percy, F. J. Callanan.

PUBLICATIONS AND SCIENTIFIC PAPERS.

E. W. Taylor, *Chairman*, R. B. Osgood. F. T. Lord, R. M. Green, A. C. Getchell.

MEMBERSHIP AND FINANCE.

S. B. Woodward, *Chairman*, A. Coolidge, Jr., Samuel Crowell, Gilman Osgood, Homer Gage.

ETHICS AND DISCIPLINE.

J. W. Bartol, *Chairman*, Henry Jackson, T. J. Robinson, David Cheever, F. W. Anthony.

MEDICAL EDUCATION AND MEDICAL DIPLOMAS.

C. Frothingham. *Chairman*, C. F. Painter, J. F. Burnham, A. G. Howard, R. L. De Normandie.

STATE AND NATIONAL LEGISLATION.

Alfred Worcester, *Chairman*, F. G. Wheatley, E. H. Stevens, F. E. Jones, J. S. Stone.

PUBLIC HEALTH.

E. H. Bigelow, *Chairman*, Annie L. Hamilton, E. F. Cody, Victor Safford, R. I. Lee.

The President nominated and the Council appointed these delegates to the meetings of the House of Delegates of the American Medical Association for two years, from June 1, 1920:

C. E. Mongan, Somerville, Alternate, Gilman Osgood, Rockland.

H. G. Stetson, Greenfield, Alternate, L. A. Jones, Swampscott.

J. F. Burnham, Lawrence, Alternate, A. R. Crandell, Taunton.

Dr. Channing Frothingham read the report of the Committee on Medical Education and Medical Diplomas and also a report as delegate to the Annual Congress on Medical Education and Medical Licensure at Chicago, in March. The reports were accepted by vote. (See appendix for the reports.)

The report of the Committee on State and National Legislation was presented by the secretary, Dr. J. S. Stone, and was adopted. (See appendix for the report.)

Dr. E. H. Bigelow read the report of the Committee on Public Health and it was accepted. (See appendix for the report.)

The Librarian reported that he had attended to the various duties of his office during the past year. Report accepted.

The Secretary read the report of the Committee on the Control of Cancer and it was accepted. (See appendix for the report.)

A resolution passed by the Bristol South District Medical Society at its annual meeting, May 6, 1920, was read by the Secretary. (See appendix for the resolution.) No action.

Dr. F. B. Lund reported for the delegation of The Massachusetts Medical Society to the meeting of the House of Delegates of the American Medical Association at New Orleans, May 26 to 30, 1920. He said that the Executive Committee of the Board of Trustees of the Association was considering the exact dates of the meeting of the Association in Boston in 1921 (probably June 6 to 10) and that arrangements for that convention would be made in due time.

On motion by Dr. Victor Safford it was *Voted:* That the President be authorized to appoint a committee of three to attend the next meeting of the State Teachers' Association in order to confer with a committee of the Teachers' Association with a view to coöperation on the part of the teachers and the medical profession in promoting better health conditions in our schools. The President appointed as this committee: Annie Lee Hamilton, R. I. Lee. C. Benjamin Fuller.

Voted: That the President be authorized to appoint two members of the Society to represent the Society on the "Massachusetts Central Health Council." In accordance with this vote the President appointed E. H. Bigelow and Victor Safford.

Dr. A. K. Stone, chairman of the special committee on Health Insurance reported that the committee had had one conference with the delegates of the Society to the House of Delegates of the American Medical Association just before the meeting of the Association at New Orleans, in order that the delegates might get information as to health insurance at first hand from the District Medical Societies. There had been no legislation on compulsory health insurance presented at the last session of the Legislature.

A proposition to amend Section 1, Chapter IV, line four, of the By-Laws by changing the word "chairman" to "members," so that all the members of the Standing Committees might be councilors instead of the chairman alone, was ruled out of order by the chairman after Section 45 as to amendments of rules of order, of "Robert's Rules of Order," the official guide of the Society, had been read by the Secretary, and also Chapter IX of the By-Laws of the Society, defining the manner of making amendments.

Adjourned at 1.55 P.M.

WALTER L. BURRAGE,
Secretary.

APPENDIX TO THE PROCEEDINGS OF THE COUNCIL.

REPORT OF THE COMMITTEE ON MEDICAL EDUCATION AND MEDICAL DIPLOMAS.

The Committee on Medical Education and Medical Diplomas has worked during the past year upon problems of medical education, and the admission of physicians who have held diplomas from schools which The Massachusetts Medical Society does not recognize to the examination before the censors of the several districts. In addition, a new list of recognized medical schools has been prepared for and adopted by the Council, and a subcommittee with Dr. De Normandie as chairman, assisted by Dr. Homer Gage of Worcester and Dr. Ernest L. Davis of Springfield, have made an elaborate study of the hospitals in the state, and turned in a report to the Council on Medical Education of the American Medical Association. This report is designed to show what hospitals in the state are suitable places for internes to put in a year in case such a requirement becomes necessary for the M.D. degree or for admission to practice.

The following physicians who have graduated from unrecognized medical schools have been admitted to examination before the censors:

Dr. Florence Bailey, Lawrence, Mass.
Dr. Joseph A. Smith, Worcester, Mass.
Dr. C. J. Mikolaitis, Lawrence, Mass.
Dr. Donat Milot, Fall River, Mass.
Dr. Ralph S. Chambers, Westboro, Mass.
Dr. Eugene S. Belisle, Worcester, Mass.
Dr. Halstead G. Murray, Framingham, Mass.

The Committee decided at its first meeting to take an active interest in the problems of medical education in this Commonwealth. For this purpose a joint meeting was held with representatives of the State Board of Registration in Medicine, of the three medical schools which are grouped in Class A by the classification of the American Medical Association, namely, Boston University, Harvard University and Tufts College Medical School, and from the Homeopathic State Medical Society in order to discuss problems of medical education in this State. It was felt that some additional effort should be made to keep improperly trained physicians from practicing medicine in this Commonwealth, since it was felt that the present laws in regard to medical registration are not satisfactory for this purpose. After the discussion of several plans, it was decided to recommend to the Legislature a bill which would call for a premedical educational requirement in addition to an M.D. degree before permitting an individual to appear for examination for a license to practice.

The following extract from the bill shows the nature of the pre-medical requirement recommended:

> "Graduation from a standard high or secondary school and satisfactory completion of at least two years of study in a college of liberal arts or scientific institute or school recognized as reputable by the department of education of this Commonwealth, which college of liberal arts, institute or school, has required not less than nine hundred and sixty hours of work during the said two years. An applicant who offers evidence of study under the provisions of this section must have devoted not less than one hundred and ninety-two hours to the study of physics, one hundred and twenty-eight hours to the study of biology and ninety-six hours to the study of English composition and literature."

All the medical organizations represented at this meeting were enthusiastic in support of this bill as it was felt that in addition to helping to protect the public from poorly trained physicians, it would protect individuals from entering schools which are unable to give them a proper medical education. At a subsequent meeting, in addition to the organizations represented at the first meeting, representatives of the Massachusetts State Osteopathic Society and the Massachusetts School of Osteopathy were invited and their support was also requested, because in accordance with the laws of Massachusetts, a man practicing osteopathy is practicing medicine and is subject to the same examinations that graduates of other schools are. The osteopathic physicians did not care to promise their support and subsequent developments before the Legislature showed that they were actively opposed to the bill.

The Chairman of your Committee acted as petitioner for this bill which had been prepared by the joint conferences and asked the support of your Committee on State and National Legislation. The bill was referred to the Committee on Public Health of the Massachusetts Legislature and received an unfavorable report. Two members of the Committee who seemed more intelligent than the others in regard to matters of medical education were in favor of the bill and so it was presented to the House despite the unfavorable report, but was defeated 71 to 15.

Despite this defeat, it was felt that an entering wedge has been made and the Secretary of the State Board of Registration in Medicine feels that a further effort should be made to pass a bill in regard to pre-medical requirements. Your Committee, therefore, is prepared next year to present to the Legislature a similar bill and asks your coöperation for more active support of this bill on the part of the members of this Society. It is felt that the Legislators naturally are not familiar with the importance of such a measure. It is also felt that a Legislator would naturally turn to his physician in regard to matters of medical education, and this Committee strongly urges that the attention of the members of the Society be called to the importance of supporting bills for the improvement of medical education in the Commonwealth and that strong pressure be brought to bear upon any member of this Society who is the family physician of a member of the Legislature to see that the importance of any bill concerning medical education be brought directly to the attention of the Legislator. The Committee feels that it is a disgrace to the Commonwealth of Massachusetts that two of the seven medical schools in the United States which have been classified as schools which need a thorough reorganization before they can properly teach medicine should flourish in this Commonwealth because of the inability of those interested in medical education to secure the passage of laws to bring these schools up to proper standards. Therefore your Committee feels that it is important for it to interest itself in these problems and to endeavor to stir up interest among all the well-intentioned medical interests of this Commonwealth.

The Chairman of your Committee went to Chicago to the meeting of the Annual Congress on Medical Education and Licensure of the American Medical Association and presents a separate report on what was carried out at that meeting.

Channing Frothingham, *Chairman.*

Report of the Delegate of the Massachusetts Medical Society to the Annual Congress on Medical Education and Licensure.

The Annual Congress on Medical Education and Licensure was held in Chicago at the Congress Hotel, on March 1, 2, and 3, 1920.

The organizations represented at this congress were the Council on Medical Education of the American Medical Association, the Association of American Medical Colleges, and the Federation of State Medical Boards of the United States.

An innovation was tried this year in that a joint program was arranged with the idea of interesting all three of these organizations.

During the meeting a vote was cast, at the instigation of Dr. Kober, protesting against the passage of an anti-vivisection bill which was being urged before Congress in regard to vivisection in the District of Columbia.

A vote was passed in favor of compulsory military training. This vote was rushed through, with very little discussion, at the end of a long day's session and I doubt if if expressed the real feelings of many of the delegates. It was passed on the assumption that compulsory military training would be of great benefit to the health of the nation.

Dr. Wells reported a vote of the Council on Medical Research to the effect that it is exceedingly important to see that proper sums of money are raised in order to pay proper salaries to physicians who undertake work in the fundamental medical sciences, because, due to lack of proper remuneration, practically no individuals are undertaking this work and in a short time it will be impossible to secure professors to teach these subjects properly.

During the meeting considerable time was spent by the various speakers on the subject of whole time clinical professors. There were advocates in favor of the clinical professor limiting his work entirely to teaching and hospital work for which he should receive remuneration only in the form of a salary from the university. Others advocated allowing the so-called full time clinical professor to do a certain amount of private work for which he should receive remuneration. As a result of listening to all the discussion, it seemed to your delegate that a full time clinical professor should devote his time entirely to teaching, research, organization of the department and his public clinic and that, theoretically, such a teacher should receive no more financial return than the other full time professors in the various subjects taught in the medical school. Unfortunately, the universities apparently have not sufficient funds to pay all the professors and other members of the teaching staff which are necessary for a medical school, proper salaries; and therefore, it seems that the present time is not the proper one to start in the organization of whole time clinical professors until the laboratory branches are properly equipped financially. If a university were properly endowed, it might be advisable to try the experiment of full time clinical professors on a distinct university basis, but if so, these men should be treated the same as the other full time professors. The various plans for approaching a basis of full time professors in the clinical branches which were suggested seemed to your representative to be wholly unfair to the laboratory professors.

A plea was made for shortening the time necessary for the preparation of a man for the practice of medicine, and it was felt that this could be done best by shortening the time in the grammar school, as it did not seem possible to leave anything out of the preparation for medical work or shorten the medical curriculum after that period. It was felt by the speaker that two years could be saved in our present curricula before the age of twelve.

The report of Secretary Colwell of the Council on Medical Education of the American Medical Association in regard to the diminution in the number of poor medical schools and the increase in the standards of the existing medical schools was very encouraging in that it showed that practically all the medical schools of the country were endeavoring to reach a proper standard.

At one of the sessions discussion about the reciprocity between state licensing boards was discussed and it was shown that the standards of the various states are still so variable that a definite standard cannot very well be established. It was felt, however, that it would be desirable eventually for a national standard to be inaugurated.

Excellent papers were also presented by the chairmen of the committees appointed to investigate the present methods of teaching the fundamental medical sciences in the medical schools of the Association. The facts were sought by means of questionnaires, in most cases, and the information thus obtained had been compiled by the committees, and from it recommendations made. There was nothing especially revolutionary recommended in regard to this teaching, but the outline of the best method for teaching the various subjects, in the opinion of the committees, was presented and it was pointed out that many schools of the Association had not yet reached this stage of perfection in their courses. There was some discussion as to the best method of instruction in certain of the subjects.

Considerable attention was also paid to the question of graduate instruction in medicine and it was felt that now was the time for this country to seriously organize for the teaching of graduates in medicine. It was felt that higher degrees should be given for this graduate instruction in medicine for those who wanted to pursue several years of study and that courses for practitioners who simply wish to keep up to date with the recent advances should also be arranged.

An excellent exposition of the duty of the state universities in regard to the problems of public health was presented. It was shown that not only should the state university busy itself with the turning out of physicians into the community, but that it should take an active part in the organization of the state in problems of preventive medicine and in the case of the chronically sick or disabled.

On the whole the meeting presented many live issues in American medical education and registration in medicine, the solution of which is not in each case perfectly clear as yet. Your delegate feels that as a result of this meeting there are no definite recommendations or instructions which should be given by this Society to your delegates to present to the House of Delegates of the American Medical Association in regard to the work being done by the Council on

Medical Education of the American Medical Association.

Channing Frothingham, *Delegate.*

Report of the Committee on State and National Legislation.

The Committee, pursuant to instructions from the Council, wrote to each Senator and Representative, endorsing the medical aspects of the bill before Congress providing for universal military training, and advocating the bill as tending to promote the health and physical well-being of the young men of the country. The bill was not enacted. The Committee also opposed the bill to forbid animal experimentation in the District of Columbia. No other matters of national legislation were considered.

Four matters of importance in state legislation were considered and acted upon by the Committee. These were: First, Vaccination; second, Pre-Medical Education; third, Physical Training of School Children; and fourth, Maternity Aid.

In reference to vaccination the Committee advocated the extension of compulsory vaccination to the scholars of private schools and opposed the bill to abolish compulsory vaccination in public schools. No legislation was passed.

The bill to provide that a knowledge of chemistry, physics, and biology be required as preliminary to the study of medicine was advocated. It was referred to the next General Court. .

The bill for improving the physical training of pupils in the public schools was advocated in the session of the Legislature of 1920 and a similar bill was advocated in the closing days of 1919. Both bills were defeated.

On the various bills providing for maternity aid the Committee took no ground with reference to the general social question as it was felt that on this the medical profession was not fully united and was entitled to no special voice. On the medical aspects of the question, if legislation was to be enacted, the Committee advocated the bill providing that maternity aid be administered as a public health measure and not as a poor relief measure as some bills proposed. In the closing days of the session, the matter of maternity aid was left to the consideration of a commission of five who are to report at the special session of the Legislature which meets in November. This commission consists of the Commissioner of Health, the Commissioner of Public Welfare, and three members to be appointed by the Governor, one to be a physician and one to be a woman. Thus between the present time and November the medical profession has the opportunity to form opinions and to impress those opinions on the commission with reference to this very important question.

So far as accomplishment goes, the Committee reports absolute failure to secure any constructive legislation on any of the four main subjects to which it devoted attention. No destructive legislation, however, was passed.

Certain other measures were advocated by the Committee. One to permit the limited registration of internes and medical officers in hospitals was passed.

The Legislature also provided for the detention of prisoners suffering from venereal disease or tuberculosis until they ceased to be a menace to the public health.

These two measures are the only ones asked for by the medical profession which were passed.

The bills to lower the standard for registration of foreigners (the old Pang Suey bills) were defeated.

A bill to prevent the advertising of cures for venereal diseases was defeated, being opposed by the Joint Judiciary Committee.

A bill to provide for the licensing of attendants trained to care for the sick was referred to the next General Court. This bill deserves the most careful consideration as one tending to solve some problems of hospital administration and at the same time providing proper care for the sick at their homes.

James S. Stone, *Secretary.*

Report of the Committee on Public Health.

The regular meetings of the Committee are held the last Monday in the month, at 10.30 a.m., at the office of the Secretary, Dr. Hamilton, 141 Newbury Street, Boston, Mass.

We gratefully acknowledge help received the past year in our work from the President and members of this Society and from citizens of the state.

The severe winter just passed has emphasized the need of placing adequate health agencies within reach of every home of the Commonwealth.

Last year exhausted "The Emmons Fund," which fund largely financed our work for four years. This year, through the generosity of this Society, we have received a grant of seven hundred dollars.

We ask you to bring to the attention of the Committee any need or any hopeful method of work which fairly comes within our field of action.

We continue to be indebted to speakers on public health matters who freely give their services to District Society meetings.

The Springfield Convention last fall was of a high order and was well attended by health workers, teachers, and citizens in the district. A program of the meetings is appended to this report. The success of the meetings was insured by the hospitality of the City of Springfield, the Chamber of Commerce, the School Department, and the manufacturers. Plans are being considered for a convocation this fall to be held in the city of Greenfield. We ask for the active interests of all physicians in Western Massachusetts in these meetings.

There has been recently formed in this state, the Massachusetts Central Health Council whose membership comprises a group of organizations with statewide interest in public health. The purpose of the Council is to promote coöperation among these organizations in the interests of the public health in this Commonwealth. The formation of the Central Health Council is the result of a wide-spread feeling that the voice of the united organizations engaged in the various fields of public health work would command the confidence of the citizens of the state

In matters of health legislation the united opinion of these organizations, expressed through the Council, will, we feel, carry weight with the Legislature, and will help in promoting the enactment of wise health laws and in preventing unwise health legislation in this state. In the readjustment of public health work following the Great War, your Committee desires to coöperate with the State Department of Health in conserving the splendid spirit of service among our people called into action by the pressing needs of war.

Enos H. Bigelow, *Secretary.*

Program of Springfield Convocation.

Friday, November 21.

8 P.M.

Opening Session.

Addresses of Welcome from Dr. Enos H. Bigelow, Chairman of the Committee on Public Health; Dr. Alfred Worcester, President of The Massachusetts Medical Society; and His Honor, Arthur A. Adams, Mayor of the City of Springfield.

"The Health of the Commonwealth." His Excellency, Hon. Calvin Coolidge, Governor of the Commonwealth.

"Better Health in Massachusetts." Dr. Eugene R. Kelley, State Commissioner of Health.

"The Program of the International Health Board." Dr. Victor G. Heiser, Director for the East, International Health Board.

Saturday, November 22.

Morning.

Session on Personal and School Hygiene.

10.05 "Personal Hygiene the Basis of Health." Professor W. T. Sedgwick, Head of the Department of Biology and Public Health, Massachusetts Institute of Technology.

11.05 "The Dental Care of School Children." Dr. George H. Wright, Lecturer on Dental Hygiene, Harvard Dental School.

12.05 "Essentials of School Hygiene." Dr. Walter H. Brown, Health Officer, Bridgeport, Conn.

Saturday, November 22.

Afternoon.

Session on Industrial Hygiene.

2.05 "Industrial Health." Dr. Cecil K. Drinker, Secretary of the Governing Committee on Industrial Hygiene, Harvard Medical School.

3.05 "Public Health Nursing in an Industrial Community." Miss Mary Beard, Director of the Boston Instructive District Nursing Association.

4.05 "Good Air and the Health of the Worker." C. E. A. Winslow, D.P.H., Professor of Public Health, Yale University Medical School.

Saturday, November 22.

8 P.M.

Final Session.

"The Essentials of an Adequate Diet." Alice F. Blood, Ph.D., Head of the Department of Household Economics, Simmons College, Boston, Mass.

"Lessons from the Framingham Health Experiment." Dr. P. C. Bartlett, Chief Medical Examiner, Community Health and Tuberculosis Demonstration, Framingham, Mass.

"Rural Sanitation in the North and South." C. W. Stiles, M.D., U. S. Public Health Service, Washington, D. C.

"The Relation of Feeblemindedness to Public Health." Dr. Walter E. Fernald, Superintendent, Massachusetts School for Feebleminded.

REPORT OF THE COMMITTEE ON THE CONTROL OF CANCER.

The Committee on the Control of Cancer desires to make the Council a report on its work of the last year.

Its Secretary has kept in close touch with the secretaries of the District Medical Societies, with the result that the following societies have held, or are to hold, meetings on cancer: Dr. Frederick Bryant, of Worcester, Dr. C. Everett Field, of New York, and Dr. Edward Reynolds addressed a meeting held in Worcester, Sept. 10, 1919. Dr. Robert B. Greenough addressed the Essex South District Medical Society at Gloucester, Jan. 6, 1920. He also addressed the Berkshire District Medical Society, Jan. 8, 1920. Dr. D. F. Jones was the speaker at the Franklin District Medical Society, Jan. 12, 1920. Two meetings were held on Jan. 14, 1920,—one addressed by Dr. Frederick Bryant, of Worcester, the Hampshire District Medical Society; the other, the Suffolk District Medical Society, addressed by Dr. F. C. Wood, of New York. Dr. Frederick Bryant, of Worcester, addressed the Hampden District Medical Society on Jan. 20, 1920. Dr. Lincoln Davis addressed the Middlesex North Society, Jan. 28, 1920. Dr. E. L. Young, Jr., was the speaker at the Bristol South District Medical Society, May 6, 1920. Two meetings were arranged on Feb. 5, 1920, but were postponed on account of the storm—the Norfolk South District, at which Dr. Lincoln Davis was to speak; the Barnstable District Medical Society, at which Dr. John T. Bottomley was to speak.

The Bristol North Society and the Middlesex South Society have arranged for meetings in September and October. Three societies—the Essex North, the Middlesex East, and the Norfolk—had arranged their meetings for the year before our Committee communicated with them, but they will be followed up next year.

Largely owing to the efforts of a member of your Committee, the State Commissioner of Health undertook the entire matter of distributing to the practitioners of the state the exhaustive pamphlet on cancer which was addressed to the profession of the country by the American Society for the Control of Cancer, and which was published jointly by that society and the American Medical Society. Your Committee was, therefore, not obliged to draw upon the money which was granted it at a time when it was thought we must undertake a part of this expense.

The Committee has kept in constant touch with the state organization of the American Society for the Control of Cancer, with its cancer interests as involved in the newly formed Massachusetts Health Council, and with a variety of other agencies which are concerned in such work. It believes that the present activity of the anti-cancer campaign is sure to yield results and is interested and willing to do its part in the future as well as in the past.

EDWARD REYNOLDS, *Secretary.*

RESOLUTION PASSED BY THE BRISTOL SOUTH DISTRICT MEDICAL SOCIETY AT ITS ANNUAL MEETING, MAY 6, 1920.

Resolved that the Bristol South District of the Massachusetts Medical Society considers the passage by State, or Nation, of paternalistic laws as class legislation and an infringement of the rights of individual citizenship.

It further considers as pernicious and unfair and as tending to universal socialism the passage of such laws.

For these reasons and for the further reason that it has at heart the best interests of the Nation and this Commonwealth it opposes strenuously any legislation favoring so-called health insurance, compulsory or voluntary, in all its various forms, including the maternity bill now before the Legislature.

Resolved that a copy of this resolution be sent by the Secretary to the Council of the Massachusetts Medical Society and to each legislator in this District.

APPOINTMENT OF DR. BENJAMIN WHITE.—Dr. Benjamin White has been appointed Director, Division of Biologic Laboratories of the Massachusetts State Department of Public Health to succeed Dr. Milton J. Rosenau, resigned. Dr. White has also been appointed Lecturer of Immunology in the Massachusetts College of Pharmacy and Assistant in the Department of Preventive Medicine and Hygiene of the Harvard Medical School.

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